DOUGLAS AIRCRAFT COMPANY
TORRANCE (C6) FACILITY
PRELIMINARY PHASE III
GROUNDWATER AND SOIL
INVESTIGATION REPORT

Prepared for:

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DOUGLAS AIRCRAFT COMPANY'S TORRANCE (C6) FACILITY PRELIMINARY PHASE III GROUNDWATER AND SOIL INVESTIGATION REPORT

1.0 INTRODUCTION

The purpose of this report is to present the results of Task I and IA of the Phase III groundwater and soil investigation at the Douglas Aircraft Company's Torrance (C6) facility. The C6 facility is located at 19503 South Normandie Avenue in Los Angeles, California (Figure 1). Woodward-Clyde -Consultants (Woodward-Clyde) has conducted two previous investigations (1987 and 1988) in the area of Tank Cluster The results from these investigations 15T through 18T. identified this tank cluster as a potential source identified volatile organic compounds (VOCs) the Additional groundwater. background information and analytical results from these earlier Woodward-Clyde investigations can be found in the reports submitted to the California Regional Water Quality Control Board (CRWQCB), Los Angeles Region dated April 1987 and 10 May 1988.

2.0 SCOPE AND OBJECTIVES

The specific scope and objectives of the Phase III groundwater and soil investigation are outlined below. Objectives were to:

- Evaluate the quality of the groundwater entering the site in the apparent hydraulic upgradient direction of Tanks 15T through 18T.
- 2. Assess the lateral and vertical extent of VOCs in the groundwater in the vicinity of Tanks 15T through 18T.

- 3. Evaluate the potential for offsite migration of VOCs in the groundwater.
- 4. Obtain quantitative estimates for aquifer parameters in the shallow and deep zones within the semi-perched aquifer (to depths of 130 to 150 feet). These parameters are required for design of a remedial program.
- 5. To estimate the lateral and vertical extent of VOCs in the soil around Tank Cluster 15T through 18T.

These objectives were accomplished using an approach comprised of the following tasks:

- o Task I Installation of five shallow (70 to 90 feet) observation wells (WCC-6S, -7S, -8S, -9S, and -10S) and two deep (120 to 140 feet) observation wells (WCC-1D, and -3D). In addition, Task I involved advancing four soil borings in the vicinity of Tank Cluster 15T through 18T.
- o Task IA Slug testing of five shallow wells and two deep wells.
- o Task III Aquifer testing.
- o Task IV Evaluation of data and report preparation.

The background for this investigation and a description of the tasks is described in Woodward-Clyde's work plan approved by the CRWQCB entitled "Douglas Aircraft Company Torrance (C6) Facility Phase III Ground Water and Soil Investigation Work Plan," dated 9 February 1989. This report presents the results obtained to date from Tasks I, IA, III and IV. No Task II wells had been installed at the time this report was prepared. Task II wells were not considered necessary at this time, for this phase of investigation, based on results from Task I wells.

2.1 Task I

The work performed during Task I involved advancing four soil borings (B-6, -7, -8, and -9), each to a depth of approximately 65 feet, around Tank Cluster 15T through 18T, to evaluate the extent of VOCs in this area. This task also involved installing wells at two depths in the water-bearing unit called the semi-perched aquifer. The upper zone wells are screened from 60 to 90 feet below ground surface, with the static water level at approximately 70 feet below ground surface. These upper zone wells will henceforth be referred to as "shallow" wells. The lower zone wells are screened from 120 to 140 feet below ground surface. The lower zone wells will henceforth be referred to as "deep" wells. The installation of observation wells within the upper and lower zones of the semi-perched aquifer was designed to evaluate differences in vertical gradient and concentrations of VOCs within the semi-perched aquifer. Observation Wells WCC-1D, -3D, -6S, -7S, -8S, -9S, and -10S have been installed in accordance with Task I of the work The observation well locations are shown on Figure 2. Task I also included development of the observation wells, and the collection and analysis of groundwater samples. Wells WCC-1S through WCC-5S had been installed during an earlier phase of work.

2.2 Task IA

The objective of Task IA was to conduct slug tests on six shallow wells and two deep observation wells to provide preliminary estimates of hydraulic conductivity in the shallow and deep zones of the semi-perched aquifer. These data have been used in estimating groundwater velocity and the distribution of VOCs in the groundwater within the subject area.

2.3 Task III

Woodward-Clyde conducted a pump test at the Torrance facility to observe the response of the semi-perched aquifer to hydraulic stresses created by pumping.

3.0 FIELD PROGRAM

3.1 Soil Boring Installation

Four soil borings, B-6, -7, -8, and -9, were drilled around Tank Cluster 15T through 18T, as shown on Figure 2. Each soil boring was drilled to a depth of 66.5 feet below ground surface. The purpose of the borings was to assess the vertical and horizontal extent of VOCs in the vadose zone soil in the vicinity of the tanks. Borings B-6 and B-7 were placed along the south side of the tanks, while Borings B-8 and B-9 were placed about 40 feet away, to the east and north of the tanks, respectively.

Field procedures used for drilling and sampling activities are described in Appendix A. The lithologic boring logs from B-6, -7, -8, and -9 are presented in Appendix B. The results of soil sample analyses from these borings are presented in Section 4.4.

3.2 Observation Well Installation

Seven observation wells were installed during Task I of this investigation, as previously discussed in Section 2.1. Five of the wells were completed to a depth of 90 feet, and two were completed to a depth of 140 feet. The locations of these wells are shown on Figure 2 and the procedures involved in the installation are described in Appendix A.

Of the five shallow wells, the first, WCC-10S was completed near the northwest corner of the property. This location was chosen to provide information on the quality of groundwater entering the site. The second and third wells, WCC-7S and -8S, were installed downgradient of Tank Cluster 15T-18T to assist in evaluating the lateral extent of VOCs in the groundwater. Observation Well WCC-7S was placed about 160 feet south of WCC-4S, and WCC-8S was placed approximately 125 feet north of WCC-1S. These locations were chosen considering variations in the direction of groundwater flow (southeast) previously measured at the site, and the concentration level of VOCs in WCC-1S, -3S, and -4S.

The two deep wells were installed to assess the possibility of VoCs migrating vertically downward into the lower zone of the semi-perched aquifer. Well WCC-3D was installed approximately 30 feet east of the tank cluster, and WCC-1D was completed about 190 feet east-southeast of WCC-3D, next to WCC-1S. These wells were also installed to evaluate the differences in hydraulic conductivity between the deep and the shallow zones of the aquifer.

As proposed in the Phase III work plan, Wells WCC-6S and WCC-9S were installed after receiving chemical analysis results from the three initial shallow observation wells (i.e., WCC-7S, -8S, and -10S). Because the results indicated VOCs were present at elevated concentrations in WCC-7S, Wells WCC-6S and WCC-9S were installed in locations which could intercept a more south to southeast path of migration than the wells previously installed.

3.3 Observation Well Slug Testing

Task IA involved conducting slug tests on six shallow wells, and two deep wells, to obtain estimates of horizontal hydraulic conductivity (k) values in the immediate vicinity of the six wells for the shallow and deep zones. Slug tests were completed on shallow Wells WCC-4S, -5S, -7S, -8S, -9S,

Two deep wells WCC-1D and WCC-3D were also slug and -10S. dates were 19 July, 31 August, tested. Testing 4 October 1989. An Envirolabs Data Logger, model DL-120-MCP equipped with a pressure transducer was used for raw data collection. Slugs of water being introduced and withdrawn from each well were simulated by volume displacement using a 39-inch-long, 3.25-inch-diameter mandrel constructed of PVC pipe and plugs, and filled with silica sand. The slug test procedures and subsequent data analysis are described in Appendix A, while the slug test results are discussed in Section 4.2.

3.4 Pump Test

As part of Task III of this investigation, Woodward-Clyde conducted a 30-hour, constant discharge pumping test on 20 through 21 December 1989 at the Torrance (C6) facility. Well WCC-4S was pumped using a 1-1/2 horsepower submersible Observation wells included WCC-1S, -4S, -6S, -7S, pump. Five of the wells were automatically -8S, -9S, and -1D. monitored for water level using three Terra-8 data loggers equipped with a total of five pressure transducers. addition water levels were measured at regular intervals for all of the wells except WCC-1S, -1D, and -4S (monitored by data logger), using a Solonist electrical well sounder. Water level monitoring continued from the time the pump was switched on until two hours after the pump was switched off. The pump test procedures and the subsequent data analysis are described in Appendix A and the pump test results are discussed in Section 4.3.

4.0 RESULTS

4.1 Geology

The general description of shallow (less than 90 feet below ground surface) geologic deposits beneath the site was

4.2 Slug Testing Results

Results from slug testing of Observation Wells WCC-4S, -5S, -7S, -8S, -9S, -10S, -1D, and -3D, including the data are summarized in Table 1. Hydraulic reduction, conductivity values ranged from 24 to 140 gallons per day per square foot (gpd/ft2) in the shallow wells. values are typical of the sandy silts and silty sands encountered during drilling in the shallow water bearing zones of the semi-perched aquifer. The calculated hydraulic conductivity values were 21 gpd/ft² for WCC-1D 6.6 qpd/ft^2 for WCC-3D.

4.3 Pump Test Results

The pump test data from each well showing a discernible response were analyzed using one or more of the following techniques: Recovery (Residual Drawdown) plot, Cooper-Jacob Time Drawdown plot, and/or Distance/Drawdown plot. A summary of the results is presented in Table 2. Slug test values obtained earlier are included for reference.

The hydraulic conductivity value derived from the pump test at the pumping well, WCC-4S, was 470 gpd/ft² based on analyses of recovery data (residual drawdown). This compares favorably with the pump test values calculated by both the Cooper-Jacob method and the Distance Drawdown method using data from the surrounding observation wells. Overall, the calculated hydraulic conductivity values vary within a factor of two (see Table 2). Local variations in stratigraphy can easily account for this level of variability.

The conductivity values calculated from the slug tests are not directly comparable with conductivity values calculated from the pump test, since the former only tests the portion of the aquifer immediately adjacent to the well screen,

while the pump test stresses a much larger volume of the aquifer. Overall the slug test hydraulic conductivity values are roughly on an order of magnitude lower than the pump test values. This level of variability is not surprising given that the specific assumptions and mechanics of the two test techniques are remarkably different.

Variations in the storage coefficients are somewhat greater than those for transmissivity. Fairly wide variations in the calculated storage coefficient are not unusual and, in general, have a minimal impact on the calculated yield.

4.4 Groundwater Gradient and Velocity

The groundwater gradient was calculated from the groundwater elevation data collected on 18 October 1989 (see Table 3), using Equation 1-1 as follows:

$$I = \frac{h_1 - h_2}{I_1} \tag{1-1}$$

Where:

/ = Gradient (ft/ft)

 h_1 = Upgradient groundwater contour elevation (feet)

 h_2 = Downgradient groundwater contour elevation (feet)

= Distance between groundwater contours (feet)

Based on groundwater level data of 18 October 1989, the gradient across the C6 facility appears to be south to southeast as shown on Figure 3. The gradient was calculated using the assumption that all water bearing strata in this

area act as one hydrogeologic unit. This assumption is considered valid for preliminary evaluation of flow velocity and the extent of VOCs in the groundwater.

A gradient of 0.002 towards the south-southeast was calculated using Equation 1-1.

The groundwater velocity was calculated from Darcy's equation:

$$V = \frac{KI}{7.48 n_e} \tag{1-2}$$

Where:

V = Groundwater velocity (feet per day)

K = Hydraulic conductivity of the media based on slug test values calculated in Section 4.3 (gal/day/ft²)

= Groundwater gradient calculated from Equation 1-1

7.48 = The number of gallons of water per cubic foot

 n_a = Effective porosity of the saturated media

Assuming:

K = 715 gal/day/ft² for shallow wells NOTE: The hydraulic conductivity value used in the calculation was the average of the values obtained from all the pump test analytical methods used.

I = 0.002 ft/ft calculated from Equation 1-1

 n_o = 0.30 for silty fine-grained sand.

Based on the calculations and assumptions above, the groundwater velocity is approximately 0.64 feet per day or 234 feet per year in the shallow zone of the semi-perched aguifer.

There does not appear to be a significant vertical groundwater gradient between the shallow and deep aquifers. The approximately equal static groundwater levels measured in the associated shallow and deep observation wells WCC-1S and -1D, and WCC-3S and -3D, indicate the major component of groundwater flow is horizontal.

4.5 Soil Sampling and Analytical Results

Soil samples were collected from all the observation wells and soil borings installed during the field program as described in Appendix A. Samples which had elevated OVA headspace readings and which were in close proximity to tank Cluster 15T through 18T, as well as samples from WCC-6S, were selected for analytical testing. Soil samples at selected depths from B-6, B-7, B-8, B-9, and WCC-6S were analyzed by EPA Method 8240 at West ast Analytical Service (WCAS) in Santa Fe Springs. A summary of results is presented in Table 4, while the analytical data sheets provided by WCAS, and chain-of-custody forms are presented in Appendix C.

The soil sampling results show low concentrations of organic compounds present in most of the borings installed around tank cluster 15T through 18T. Boring B-6 seems to be located near the source of the release. At this location the soil column contained elevated levels of organic compounds beginning at a depth of 20 feet and continuing down to at least 60 feet. At the other boring locations the organic compound concentrations became elevated at depths of 40 feet or more. Both halogenated and nonhalogenated

compounds are present at location B-6, with the higher concentrations of each present at a depth of 20 feet. Toluene was the dominant nonchlorinated hydrocarbon present and trichloro-(1,1,1-TCA)1,1,1-trichloroethane ethylene (TCE) were the dominant chlorinated hydrocarbons. At Boring B-7, which is located about 30 feet east of Boring B-6, a similar mix of compounds is present, however, their concentrations are at a greater depth in the boring. highest concentrations of compounds are present at a depth of 60 feet, with methylene chloride identified in the soil for the first time at this depth. Samples from Boring B-8, which is located east of the tank cluster, also contained low (<1 ppm) concentrations of compounds except for toluene, which was present at 25 ppm at a depth of 65 feet. from Boring B-9, which is north of the tank cluster, also at concentrations of compounds contained low (generally less than 1 ppm).

Three samples collected at, and just below, the water table from the borehole in which Well WCC-6S was installed, contained low concentrations of MEK (9.4 ppm), MIBK (8.4 ppm), toluene (1 ppm), and a compound tentatively identified as butyl cellosolve (0.3 ppm).

4.6 Groundwater Sampling and Analytical Results

During this task, two rounds of groundwater samples were collected and analyzed during July and August from monitoring Wells WCC-1D, -3D, and -1S through -10S, except WCC-6S and WCC-9S. These two wells were the most recently installed, and water sampling was completed the first week in October. The procedures used during these sampling efforts are described in Appendix A.

All of the water samples tested, including groundwater samples, duplicates, rinse blanks, and trip blanks, were analyzed for VOCs by EPA Method 624 by WCAS. For the first round of sampling, one sample from each well, two duplicate samples, three rinse blanks, and one trip blank were analyzed. Analysis of water samples from the second round included one sample from each well, two rinse blanks, and one trip blank.

The groundwater analytical results are summarized in Table 5. Analytical data sheets provided by WCAS, and chain-of-custody forms are attached in Appendix C.

The data indicate that of the 10 shallow wells sampled at the facility only WCC-2S, located upgradient to the northwest of Tanks 15T through 18T, -5S, and -9S, both located along the eastern boundary of the site, contained total VOCs at or below 30 ppb, predominantly TCE. One well, WCC-10S, contained TCE at about 80 ppb and less than 5 ppb of chloroform. The other six shallow wells all contained a similar mix of VOCs, with the dominant compounds being TCE, 1,1-dichloroethene (1,1-DCE), and 1,1,1-TCA, with lower concentrations of cis-1,2-dichloroethene (cis-1,2-DCE) also present.

The deep well closest to the tank cluster (WCC-3D) contained 1,1,1-TCA at concentrations of around 50 ppb on the first occasion the well was sampled. Trace amounts of TCE, toluene, and cis-1,2-DCE were also present. When the well was resampled one month later only 1,1,1-TCA was detected, but the detection limits were ten times higher for the other compounds measured in the first round of sampling because of a laboratory error. Samples from the other deep well

(WCC-1D), contained low concentrations of 1,1,1-TCA (1 ppb), TCE (2 ppb), and cis-1,2-DCE (1 ppb). The total VOC concentration in Well WCC-1D was less than 10 ppb.

The water quality data collected to date indicate the presence of TCE in the groundwater (Well WCC-10S) entering DAC's Torrance (C6) facility. The TCE concentration was measured at approximately 80 ppb, nearly an order of magnitude higher than the TCE concentration in Well WCC-2S, upgradient of Tanks 15T through 18T, and Wells WCC-5S and -9S at the downgradient boundary of the site. Wells WCC-7S and WCC-8S are located south and north, respectively, of the previously identified area of groundwater containing VOCs. Concentrations of VOCs in these two wells are greater than the concentrations in the upgradient well, WCC-2S, indicating that the north-south extent of the organic compounds in the groundwater has not been fully established.

5.0 EVALUATION OF GROUNDWATER TREATMENT OPTIONS

Concurrent with field investigations performed by Woodward-Clyde at the Torrance facility, an evaluation was made of treatment options for groundwater containing chlorinated and non-chlorinated hydrocarbons at the site. It was originally the intent of Douglas Aircraft Company to conduct a pilot evaluation of groundwater treatment systems using water produced during the pump test at the site. However, the quantity of water produced during the pump test enough for pilot tests, and so bench scale was not evaluation will be conducted. The tests will be conducted on some of the systems described in the following sections.

5.1 Description of Treatment Options

There are many treatment systems for the removal of organic compounds from groundwater. Three of these systems are:

- o Activated Carbon Adsorption
- o Air/steam Stripping
- o Oxidation

Woodward-Clyde assumed a flow rate of 50 gallons per minute (gpm) and organic concentrations at the levels found in WCC-4S for the characteristics of the influent in this treatment evaluation. The effluent organic concentrations assumed for this evaluation were the California State Action Levels.

5.1.1 Activated Carbon Adsorption

The process of adsorption onto activated carbon involves contacting the organic contaminated groundwater with the carbon, by flow through a series of packed bed reactors. The activated carbon selectively adsorbs chemical constituents by a surface attraction phenomenon in which organic molecules are attracted to the internal pores of the carbon granules.

Once the micropore surface are saturated with organics, the carbon is "spent" and must be replaced with regenerated or virgin carbon. The time to reach "breakthrough" or exhaustion is the most critical operating parameter. Carbon longevity balanced against influent concentrations governs the operating economics.

5.1.2 Air Stripping

Air or steam stripping is a mass transfer process in which organic constituents in groundwater are transferred to the gas phase (in air/steam). Air or steam stripping is frequently accomplished in a packed tower equipped with an air blower. The packed tower works on the principle of countercurrent flow. The influent water flows down through

the packing, while the air/steam flows upward, and is exhausted through the top. Volatile, soluble components have an affinity for the gas phase and tend to leave the aqueous stream for the gas phase. The gas phase effluent must be controlled. This is usually accomplished by using a carbon scrubber for air stripping and a vapor condenser followed by product-water separator for steam stripping.

Woodward-Clyde reviewed the Ejector System, Inc. cascade air stripping. This system is designed to accommodate field changes by allowing for the addition or subtraction of cascade tray modules as conditions dictate. The system is low profile and units are typically shipped completely assembled. Other systems, such as the Aquadetox process, use the same basic principles.

5.1.3 Oxidation

Treatment of groundwater using oxidation is not a new process. New applications using hydroxyl radicals as the oxidizing agent are now available. These radicals can be produced by: ultraviolet (UV) light, hydrogen peroxide, and/or cavitation reactions. Organic constituents are oxidized to carbon dioxide and water by the hydroxyl radicals.

Two types of oxidation systems which Woodward-Clyde evaluated were the CAV-OX process and the Perox-pure process. The CAV-OX process uses induced cavitation and UV light to allow oxidation to occur. The Perox-pure system uses hydrogen peroxide and UV light to cause the oxidation process.

Representatives from each of the vendors expressed the need for bench scale testing in order to better estimate the operation and maintenance costs associated with their

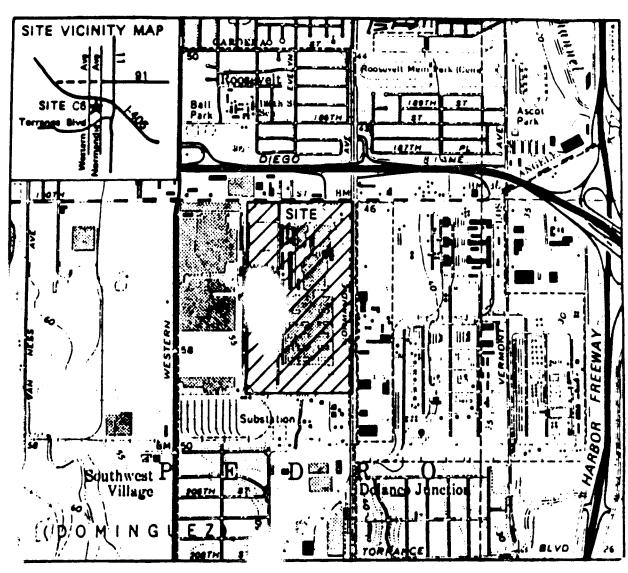
Such evaluations will be conducted by Douglas system. Aircraft after bench scale testing has been completed to aid in the selection of an appropriate system.

5.2 Discussion

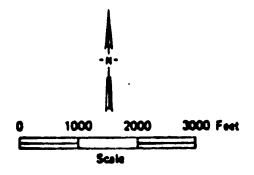
During this alternative review, vendors contacted indicated that treatability studies done on laboratory scale are Generally this fee is charged to completed for a fee. recoup analytical analysis cost incurred during the testing Two types of systems will be evaluated by of the systems. Douglas Aircraft Company for possible treatment methods for the C6 facility: air/steam stripping and oxidation. laboratory tests will allow vendors to better conceptualize Also, this will allow an the required treatment scheme. analysis of capital and operation costs for each system and it will help to evaluate the effectiveness of the systems.

6.0 REFERENCES

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- Woodward-Clyde Consultants, Leak Investigation at Douglas Aircraft Company's C6 Facility, Los Angeles, California, April 1987.
- Woodward-Clyde Consultants, Final Report on Phase III of the Subsurface Investigation at Tanks 19T and 20T at the C6 Facility, revised May 1988.





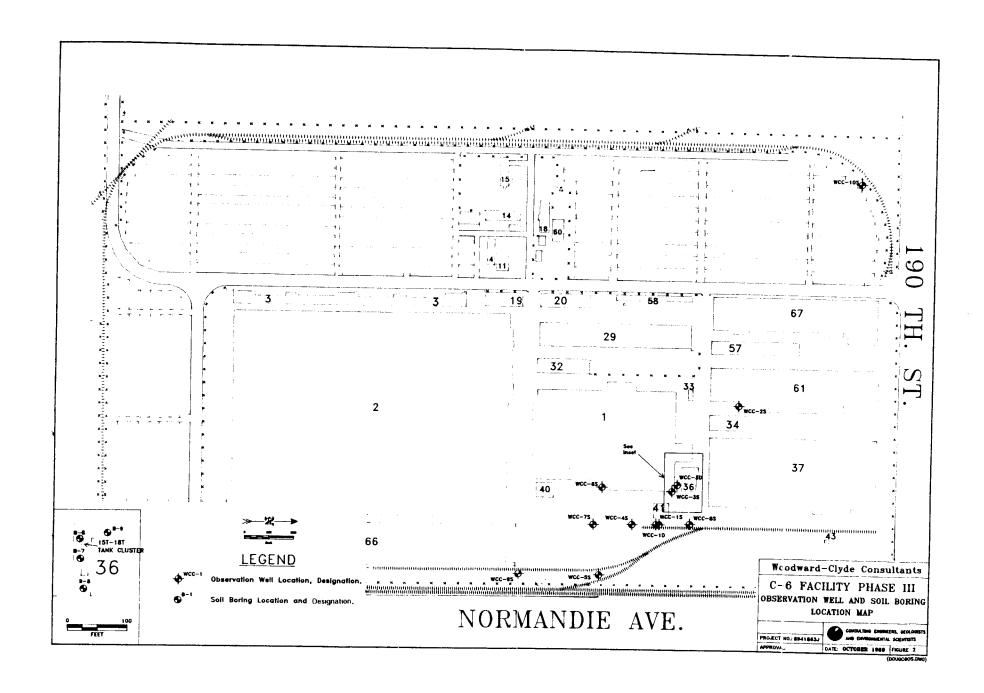


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C6 FACILITY LOCATION MAP

FIG. 1



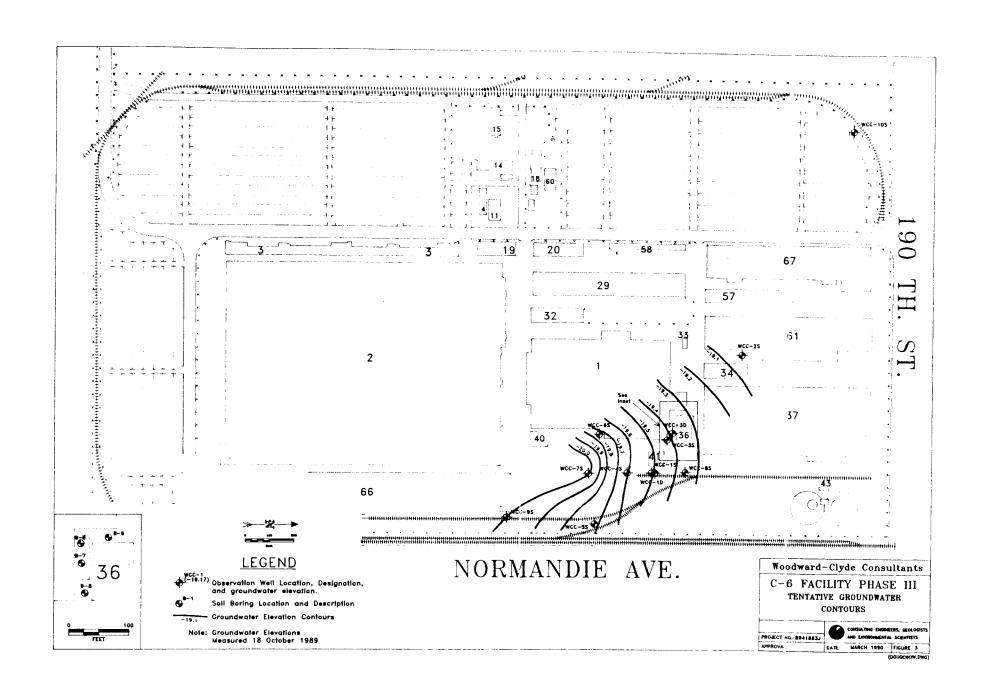


TABLE 1 SLUG TEST DATA REDUCTION

DOUGLAS AIRCRAFT C6 FACILITY, TORRANCE CALIFORNIA

Where:

K = Hydraulic Conductivity

Rc = Radius of well casing in feet

Re = Effective Radius of influence (ft)

Yo = Initial drawdown at time t =0 (sec)

H = Distance from base of well to SWL (ft)

A = Constant Based on L/Rw

Yt = Drawdown at time t (sec)

Dw = Depth of well (ft)

Depth to water(ft) - Measured 19 July, 30 August, and 4 October 1989.

Rw = Radius of Boring in feet

L = Length of screen of saturated thickness if entire screen is not saturated in feet

t = Selected time/drawdown semi-log plot (sec)

D = Thickness of aquifer in feet

(Bottom of aquifer approx. 150 feet)

B = Constant based on L/Rw

	WCC	C-4S	WCC	-5S	WCC	-7S	WCC-8S	
Parameter	IN	OUT	IN	OUT	IN	OUT	IN	OUT
Rc	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Rw	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
Dw	90	90	90	90	90	90	90	90
DTW	69.35	69.35	69.69	69.69	68.41	68.41	70.01	70.01
$L = (Dw-DTW)^*$	20.65	20.65	20.31	20.31	21.59	21.59	19.99	19.99
D = (150-DTW)	80.65	80.65	80.31	80.31	81.59	81.59	79.99	79.99
H = (Dw-DTW)	20.65	20.65	20.31	20.31	21.59	21.59	19.99	19.99
Α	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
В	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
L/Rw	49.17	49.17	48.36	48.36	51.40	51.40	47.60	47.60
Yo	0.87	1.5	0.65	2.05	0.84	1.5	0.94	1.5
Yt	0.28	0.33	0.16	0.61	0.38	0.7	0.62	1
t	20	20	11	10	20	20	20	20
Ln Re/Rw =	2.52584	2.52584	2.50616	2.50616	2.57881	2.57881	2.48737	2.48737
K (ft/sec) =	1.00E-04	1.34E-04	2.27E-04	2.16E-04	6.85E-05	6.58E-05	3.74E-05	3.65E-05
AVG K (ft/sec)	1.17E-04		2.22E-04		6.71E-05		3.69E-05	
AVG K (CM/SEC)	3.57E-03		6.76E-03		2.05E-03		1.13E-03	
AVG K (Gal/day/ft2)	7.56E+01		1.43E+02		4.34E+01		2.39E+01	

TABLE 1 (Continued)

	WCC-9S		WCC	-10S	WCC	C-1D	WCC-3D		
Parameter	IN	OUT	IN	OUT	IN	OUT	iN	OUT	
Rc	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	
Rw	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	
Dw	90	90	90	90	140	140	140	140	
DTW	67.17	67.17	69.51	69.51	70.09	70.09	70.62	70.62	
$L = (Dw-DTW)^*$	22.83	22.83	20.49	20.49	20	20	20	20	
D = (150-DTW)	82.83	82.83	80.49	80.49	79.91	79.91	79.38	79 .38	
H = (Dw-DTW)	22.83	22.83	20.49	20.49	69.91	69.91	69.38	69.38	
A	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	
В	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
L/Rw	54.36	54.36	48.79	48.79	47.62	47.62	47.62	47.62	
Yo	0.91	1.9	0.96	1.5	2.25	2.4	1.68	1.7	
Yt	0.16	0.21	0.56	0.83	0.39	0.52	1.23	1.36	
t	. 71	77	20	20	117	117	60	60	
Ln Re/Rw =	2.64567	2.64567	2.51661	2.51661	3.19028	3.19028	3.18702	3.18702	
K (ft/sec) =	4.10E-05	4.79E-05	4.78E-05	5.25E-05	3.45E-05	3.01E-05	1.20E-05	8.56E-06	
AVG K (ft/sec)	4.44E-05		5.02E-05		3.23E-05		1.03E-05		
AVG K (CM/SEC)	1.36E-03		1.53E-03		9.86E-04		3.13E-04		
AVG K (Gal/day/ft2)	2.87E+01		3.24E+01		2.09E+01		6.63E+00		

TABLE 2
SUMMARY OF AQUIFER HYDRAULICS TESTING

		Hydraulic Condu	ictivity (gpd/ft ²)	
Well No.	Slug Test ^a Pump Te		Pump Test ^b Analysis Method	Coefficient of Storativity (S) (from pump test)
18		460	Cooper Jacob	0.014
2\$	NT	NM		
3\$	NT	ND		
4\$	76	470	residual drawdown	
5S	140	NM		
6S	NT	970	Cooper Jacob	0.004
7 S	43	970	Cooper Jacob	0.013
8S	24	560	Cooper Jacob	0.009
9\$	29	NR		
10\$	32	NM		
1D	NT	NR		••
3D	6.6	NM		
1S, 6S, 7S, 8S		860	Distance drawdown (500 minutes)	0.007

a Slug test values included for reference, generally not directly comparable to pump test values.

b WCC-4S was pumping well.

NT Not tested.

NR Not responsive.

NM Not monitored.

TABLE 3

GROUND WATER ELEVATION DATA COLLECTED 18 OCTOBER 1989
DOUGLAS AIRCRAFT C6 FACILITY, TORRANCE, CALIFORNIA

Well No.	Elevation ¹ Top of Well ² (ft)	Depth to Ground Water From top of Well (ft)	Elevation of Ground Water (ft)
WCC-1S	50.70	70.18	-19.48
WCC-2S	50.59	69.65	-19.06
WCC-3S	51.19	70.61	-19.42
WCC-4S	49.69	69.28	-19.59
WCC-5S	48.22	67.92	-19.70
WCC-6S	50.95	70.65	-19.70
WCC-7S	48.29	68.36	-20.07
WCC-8S	50.56	69.91	-19.35
WCC-9S	47.01	67.08	-20.07
WCC-10S	51.12	69.54	-18.42
WCC-1D	50.45	69.96	-19.51
WCC-3D	51.18	70.56	-19.38

- 1 Reference: City of Los Angeles Benchmark CY-3028, datum is Mean Sea Level (MSL).
- 2 Top of well is top of well casing on north side marked with permanent ink.

TABLE 4

RESULTS OF SOIL ANALYSES AT DAC C6 FACILITY

	Depth	Halogena	ated and Aromatic Volatile Organics
Boring Number	of Sample (feet)	(EPA Me	thod 8010/8020, concentrations in ppm)
B-6	10	0.053 0.011 0.016 0.064 0.001 0.009	methylene chloride DCA TCE toluene ethylbenzene total xylenes
B-6	20	12 45 1,900 51 390	TCA TCE toluene ethylbenzene total xylene
B-6	30	48 21	toluene total xylenes
B-6	30	19 6	toluene total xylenes
B-6	40	59 23 320 2.9 21	TCA TCE toluene ethylbenzene total xylenes
B-6	50	0.06 0.09 0.53 0.035 0.31 0.03	1,1-dicholoroethylene DCA TCA TCE toluene total xylenes
B-6	60	7.7 9.9 2.9	TCA toluene total xylenes
B-7	30	0.15 0.09 1.7 0.09	TCA TCE toluene total xylenes
B-7	35	1	total xylenes
B-7	40	10 40 1	TCA toluene total xylenes

TABLE 4 (continued)

Boring Number	Depth of Sample (feet)	Halogenated and Aromatic Volatile Organics (EPA Method 8010/8020, concentrations in ppm)				
B-7	40	12/10 25/40 <1	TCA toluene xylenes			
B-7	50	57 880 4 41 1.7	1,1-dichloroethylene TCA 1,1,2-trichloroethane toluene total xylenes			
B-7	60	20,000 600 59,000 140 450	methylene chloride 1,1-dichloroethylene TCA tetrachloroethylene toluene			
B-8	45	0.27	toluene			
B-8	50	0.04	toluene			
B-8	60	0.04 0.44 1.0	DCA TCA toluene			
B-8	65	0.05 25	TCA toluene			
B-9	40	0.03 0.02 0.08 0.1	DCA TCA TCE toluene			
B-9	50	0.02 0.11	TCE toluene			
B-9	55	0.03 0.06	TCA toluene			
WCC-6S	75	9.4 8.4 1.0 0.30	MEK MIBK Toluene Butyl Cellosolve			

TABLE 4 (continued)

Boring Number	Depth (feet)	Halogen (EPA M	ated and Aromatic Volatile Organics ethod 8010/8020, concentrations in ppm)
WCC-6S	80	9.2 .24 2.50 2.20 .08 0.70	MEK DCE MIBK toluene TCE butyl cellosolve
WCC-6S	85	.550 .330 .150 .007	MEK MIBK toluene TCE

Borings 8 and 9 sampled on 6/14/89, Borings 6 and 7 sampled on 6/13/89.

MEK, 2-Butanone MIBK, 4-methyl-2-pentanone TCA, 1,1,1-trichloroethane TCE, trichloroethylene DCE, 1,1-dichloroethylene

BOE-C6-0071025

TABLE 5
GROUND WATER ANALYTICAL DATA AT DOUGLAS AIRCRAFT C6 FACILITY, TORRANCE, CALIFORNIA (Concentration in ug/l)

			COMPOUND								
WELL I.D.	SAMPLE DATE	1,1-DCE	1,1-DCA	1,1,1-TCA	TCE	MIBK	trans-1,2-DCE	Chloroform	Toluene	Benzene	cis-1,2-DCE
WCC-1S	03/27/87 04/13/87* 11/12/87 07/13/89 08/23/89	2,800 3,700/2,500 3,000 900 1,500	-/- 23 <20 <30	300 260/120 160 67 <30	4,600 5,500/3,600 5,200 2,400 2,800	/- <100 <100	 / 75 <20 <30	 -/ 39 <20 <30	 -/- - <20 <30	85 110/- 160 < 20 < 30	- - - <20 41
WCC-2S	11/02/87 11/12/87 07/13/89 08/23/89	5 2 <1 <1	- - <1 <1	5 <1 <1	14 4 5 3	 <5 <5	- - <1 <1	- - <1 <1	6 1 <1 <1	- - <1 <1	 <1 <1
WCC-3S	11/02/87 11/12/87 07/13/89 08/23/89	38,000 88,000 18,000 56,000	1,000 < 500 < 1,000	110,000 54,000 56,000 78,000	10,000 11,000 7,700 6,000	54,000 70,000 <3,000 <5,000	1,000 660 <1,000	<500 <1,000	80,000 140,000 32,000 56,000	 < 500 < 1,000	- <500 <1,000
WCC-4S	11/02/87 11/12/87 07/13/89 08/23/89	360 1,200 170 360	 -3 <5	14 35 11 7	700 690 270 410	- <20 <30	2 - <3 <5	2 <3 <5	 -3 <5	 -3 <5	 10 15
WCC-5S	11/30/87 01/08/88 07/13/89* 08/23/89	7 4 3/3 <1	 <1/<1 <1	- - <1/<1 <1	1 10 13/12 12	- <5/<5 <5	- <1/<1 <1	 <1/<1 <1	1 - <1/<1 <1	- - <1/<1 <1	- 6/6 4
WCC-6S	10/6/89	210	4	130	140	<5	7	<1	<1	<1	12
WCC-7S	07/13/89 08/23/89	850 1,100	<10 <30	110 66	1,300 1,400	<50 <100	11 <30	< 10 < 30	< 10 < 30	< 10 < 30	26 31
WCC-8S	07/13/89 08/23/89	430 820	<5 <5	160 130	240 430	<30 <30	9 <5	<5 <5	<5 <5	< 5 < 5	7 7
WCC-9S	10/6/89	<1	<1	<1	15	<5	<1	< 1	<1	<1	7
WCC-10S	07/13/89* 08/23/89	2/1 4	<1/<1 <1	<1/<1 <1	86/87 81	<5/<5 <5	<1/<1 <1	3/3	<1/<1 <1	<1/<1 <1	<1/<1 <1
WCC-1D	07/25/89 08/23/89	<1 <1	<1 <1	<1 1	2 2	<5 <5	<1 <1	<1 <1	1 <1	<1 <1	1 <1
WCC-3D	07/25/89 08/23/89	<1 <10	<1 <10	49 32	4 <10	<5 <50	<1 <10	<1 <10	3 <10	<1 <10	11 <10

^{*} Duplicate sample also analyzed -- Not Detected (Detection limit not specified)

APPENDIX A

FIELD PROCEDURES
AND
AQUIFER TESTING DATA ANALYSIS

APPENDIX A

FIELD PROCEDURES AND AQUIFER TESTING DATA ANALYSIS

A.1 GENERAL INFORMATION

Drilling was performed by two companies: A&R Drilling, Inc. of Carson; and Beylik Drilling, Inc. of La Habra California. Drilling began on 5 June 1989 and was completed on 30 June 1989. Soil sample borings and shallow observation well borings were drilled using a CME-75 drill rig equipped with 6-1/2 inch O.D. hollow stem augers for soil sampling and 11-inch O.D. hollow stem augers for well installation. The deep observation well borings were completed by mud rotary drilling using an Ingersoll-Rand drill rig equipped with a 10-inch tri-cone drill bit.

A.1.1 Shallow Observation Well Installation

Observation Wells WCC-7S, 8S, and 10S were constructed of threaded 4-inch diameter, Schedule 40 PVC casing and screen a depth of approximately 90 feet. set to installed by first drilling observation wells were sampling borehole with the 6-1/2-inch outside diameter (O.D.) hollow stem augers. In general, soil samples were collected at near-surface, 5 feet and then at approximately Next, these augers were removed from the 5 foot intervals. boring and the 11-inch O.D. hollow stem augers with a wooden plug placed in the bottom were used to ream out the boring to its total depth of 90 feet. Upon reaching total depth the inside of the augers were quickly filled with tap water and the wooden plug was knocked out of the bottom auger. The water was used to form hydrostatic pressure in the augers to help hold out the surging sands which would otherwise fill up the inside of the bottom augers After knocking out the prevent a proper well installation. wooden plug, the 4-inch diameter wells were installed by inserting the casing into the hollow stem auger and allowing the well casing to rest on the bottom of the boring. Filter pack material (Lone Star No. 0/30) was poured from the surface into the annulus between the casing and hollow stem auger. As filter pack material was introduced into the borehole, the hollow stem augers were slowly withdrawn from the hole to allow the filter pack to fall in place between the well casing and native soil. The same procedure was followed in placing the bentonite plug and the volclay grout backfilling.

A.1.2 Deep Observation Well Installation

Observation Wells WCC-1D and WCC-3D were also constructed of threaded 4-inch diameter, Schedule 40 PVC casing and screen and set to a depth of approximately 140 feet. The wells were installed by first completing a sampling borehole using a wire line coring system which was used to attempt continuous coring from 120 to 140 feet. This sampling system worked satisfactorily on WCC-3D, but had little success in WCC-1D. After completing the sampling borehole, the geologic formation was electrically logged (E-logged) by Geo-Hydro-Data, Inc. of Tehachapi, California. Next, the boring was reamed out to the total depth with a 10-inch diameter drill bit.

Once the boring was completed for the casing installation, the drilling mud was thinned to help break down the mud cake formed on the sidewalls of the boring. In both WCC-1D and WCC-3D the mud was thinned too much on the first attempt, and the boring sidewalls caved in and had to be redrilled. The well casing was placed down the 10-inch boring with centralizers installed at five locations along its length to keep it centered in the boring and not laying against the sidewalls. Filter pack sand was placed outside the screened interval of the casing using 1-1/2 inch diameter tremie pipe

and washing it down with tap water. A bentonite plug was set in the boring on top of the filter pack by pouring 1/4-inch bentonite pellets directly into the boring.

After allowing the bentonite pellets to settle into place the remainder of the annulus was backfilled by tremie pipe with volclay grout up to 8 feet below the surface. The top 8 feet of the annulus was backfilled with concrete.

A.1.3 Well Construction

The observation wells were constructed of 4-inch O.D. Schedule 40 PVC flush-threaded blank pipe, and screened with 0.010-inch slotted PVC screen. Adhesives were not used. The shallow wells were installed with 70 feet of blank casing and 30 feet of screen. The deep wells were installed with 120 feet of blank casing and 20 feet of screen. The well screen was filter packed by pouring or treming the filter material into the borehole from the surface. A filter pack material of Lone Star No. 0/30 sand was selected based on a field sieve analysis. Filter pack analysis and design procedures are discussed in Section C.4. The filter pack was placed from the well bottom to about 5 feet above the top of the well screen.

An approximately 5-foot thick bentonite pellet plug was placed on top of the filter pack, to minimize movement of fluids through the annular space. In addition, volclay bentonite grout was placed in the annulus from the top of the bentonite plug to approximately 8 feet below ground surface. A concrete plug was placed from the top of the volclay to the surface, to minimize seepage of surface fluids into the well and to provide strength to the backfill. The top of the well casings were completed 3 to 6 inches below grade with a waterproof locking well cap and protected with a moisture resistant steel traffic-rated

Christy box. Figure A.O is a schematic of the general observation well design. Appendix D presents the boring logs and graphic well construction details.

A.1.4 Soil Borings

Four soil borings, B-6 through B-9, to collect soil samples for chemical analysis and lithologic logging, were completed in the vicinity of the underground tank cluster, 15T through 18T. Each boring was completed to a depth of 65 feet.

Soil sampling as described in Section A.2 was completed in each boring just below the surface, and at 5-foot intervals to the total depth of each boring.

A.1.5 Soil Boring Backfill

Soil borings B-6 through B-9 were backfilled with silica sand and bentonite powder, at a ratio of 4 to 1. The top 1 to 2 feet of the borings were backfilled with asphalt.

A.2 SOIL SAMPLING

Soil samples were collected at 5-foot intervals in the soil borings and the shallow well borings to make observations regarding subsurface stratigraphic conditions and the presence of contamination, to perform field headspace tests, and to conduct laboratory analyses. Soil samples were collected using a modified California sampler that contained four brass tubes. The brass tubes were filled by driving the sampler 18 inches into undisturbed soil with the drop hammer. The number of blows required to drive the sampler 12 inches was recorded on the boring log and used to evaluate the density or consistency of the soil.

Additional soil sampling was completed for logging purposes only in the deep well borings beginning at 120 foot depth

and continuing to 140 feet. This sampling was performed using a wire line coring system which had a 2-inch diameter by 5-foot long split barrel sampler.

A.2.1 OVA Headspace Measurements

In general, one brass tube from each sample was extruded and placed into a sealable plastic bag. The bag was sealed and after approximately 5 to 10 minutes, an organic vapor analyzer (OVA) probe was inserted into the bag, and the vapor concentration in the headspace was measured and recorded on the boring log.

A.2.2 Soil Sample Preparation

One to two tubes from the soil sampler were prepared for laboratory analysis. The ends of the tubes were covered with aluminum foil, plastic end caps, and sealed with electrical tape. Soil samples were labeled with the following information:

- o Project number
- o Project name
- o Boring number
- o Sample number
- o Soil depth
- o Date
- o Sampler's initials

The soil samples were then sealed in Ziploc plastic bags and placed on ice in an ice chest. All of the soil samples were delivered to West Coast Analytical Service, Inc. in Santa Fe Springs, California for analysis. Chain-of-custody procedures, including the use of sample identification

labels and chain-of-custody forms were used for tracking the collection and shipment of soil samples. Copies of the chain-of-custody forms are presented in Appendix C.

A.2.3 Drilling Residuals

Drill cuttings from the soil borings and the shallow well borings were placed in Department of Transportation (DOT) Class 17H 55-gallon drums, and the contents of the drums using a permanent ink labeled marker spray-painted inventory number corresponding to an inventory list compiled by the field engineer. The drums were sealed and stored inside the facility hazardous waste storage area. Drilling mud and soil cuttings produced during installation of the two deep observation wells were pumped into separate roll-off bins next to the wells. Douglas Aircraft was advised of the locations and contents of the drums, and the need for proper management of the drill cuttings.

A.3 FIELD OBSERVATIONS

Observations by Woodward-Clyde Consultants' personnel during the drilling, sampling, and well installation operations were recorded on boring logs, as presented in Appendix B. These observations related to visual soil classifications, geologic and stratigraphic sample descriptions, observation well construction details, sampling efforts, OVA measurements, and other pertinent information.

A.4 FILTER PACK ANALYSIS

The selection of the proper filter pack material and well screen slot size is essential in collecting a sediment-free or low sediment content water sample. In all observation wells, soil samples were collected for sieve analysis. Filter pack design calculations were made based on the grain size distribution of these finest grained soil samples

collected within the designed screen interval and below the ground water table. For observation Wells WCC-1D, 3D, 7S, 8S, and 10S the depths of the samples analyzed were 123, 122, 75, 75, and 80 feet, respectively.

Soil sieve analyses for selection of well screen slot and filter pack size were conducted in the field. Each soil sample was heated with a portable propane stove to evaporate water from the soil. When the sample was dry, it was weighed on a scale to the nearest gram. The soil sample was then poured into the top of an eight sieve stack and shaken for approximately 5 minutes. The sieve sizes used in the analysis are shown in Figure A-1. The soil retained in each sieve was weighed and the cumulative percent retained was calculated for each sieve. The gradation analyses for the wells are illustrated in Figures A-1 through A-5.

A well design using a Lonestar No. 30 sand filter pack and a screen slot width of 0.01 inches (10 slot) was used for the five wells based on the gradation analyses. An ideal gradation of filter pack and screen slot width are plotted on Figures A-1 through A-5 along with the actual material These ideal sizes were calculated using the well design formulas presented in "Ground Water and Wells" by Driscoll, 1986." A commercially blended filter pack material was then selected that best matched the calculated filter pack curve, since custom made filter pack materials were not readily available. The grain size analysis curves for Wells -1D, -3D, -7S, -8S, and -10S were similar, and the soils were classified as silty sands to sandy silts. lithologic classification also correlated with the field descriptions of WCC--1D, -3D, -1S, -2S, -3S, and -4S.

A.5 WELL DEVELOPMENT

Observation Wells WCC-7S, -8S, -10S, -1D, and -3D were developed by Howard Pumps, Inc. of Barstow, California. Development occurred on 5 through 7 July 1989. During this development WCC-1D was damaged by breaking the bottom plug out of the well while bailing. Due to the formation conditions, sand surged up about 8 feet into the casing. This damage was repaired on 20 July 1989 by filling the well casing with drilling mud and then bailing the sand out of Then a 2-foot plug of bentonite clay was set in the bottom. the bottom of the well by pouring dehydrated bentonite pellets down the well and allowing them to hydrate. the pellets had hydrated, and formed a new bottom plug, the well was redeveloped.

All of the wells were developed, first by bailing and surging, to remove the maximum amount of sediment possible. Next the wells were pumped by submersible pump to remove a large volume of water and assure the ground water around the well was formation water which had not been affected by the The two deep observation wells, WCC-1D well installation. and -3D, required a greater effort in their development because they were installed using mud rotary drilling. Table A-1 the development times, and the ground water volumes removed during development are presented. removed from each well was observed to become clearer during development and was completely clear upon completion of the wells removed from development. Water large, steel, temporary stored in one development was "Baker" storage tank on site near Building No. 41, prior to treatment and discharge.

A.6 GROUND WATER SAMPLING

Two rounds of ground water sampling were completed from all ten of the observation wells. On 11, 12, 24, and 25 July 1989 the first round of sampling occurred (the two deep observation wells were sampled on the later two dates due to the damage of WCC-1D), and on 21 through 23 August 1989 the second round of sampling was completed.

Prior to beginning sampling procedures the static ground water level was measured in each well to the nearest one hundredth of a foot using an electronic well sounder. Then each well was purged, to remove possible stagnant water, by evacuating a minimum of three casing volumes of ground water. This was accomplished by bailing the well with a 3-1/2-inch-diamter PVC bailer attached to new polypropylene rope. The exception to this was the purging of WCA-1D and -3D on the first round of sampling only. These wells were purged by setting a submersible pump in the well and pumping a large volume of water for a final effort in development.

Throughout purging, and just prior to sampling the wells, pH, electrical conductivity or total dissolved solids, and temperature were measured and recorded for the evacuated ground water (Table A-2). These measurements were made to confirm that the wells were purged sufficiently. Sampling was done with a 1-1/2-inch-diameter Teflon bailer suspended from a monofilament line. Water samples were collected from each well in two 40 ml VOA vials.

In addition to water samples, bailer rinse samples were also collected in two 40 ml VOA vials for each well prior to collecting the water samples. The rinse samples were collected for possible analysis to confirm the sampling equipment was satisfactorily decontaminated.

The water samples, rinse samples, and two 40 ml VOA trip blanks for each sampling round, were packed on ice in a portable chest immediately after collection. Samples were delivered on the day following collection to West Coast Analytical Services. Chain-of-custody procedures, including the use of sample identification labels and chain-of-custody form, were used for tracking the collection and delivery of the samples. The chain-of-custody form is presented in Appendix C.

A.7 EQUIPMENT DECONTAMINATION PROCEDURES

Soil and ground water sampling equipment was decontaminated between sampling events using the following procedure:

- Brush-assisted water rinse to remove soil and mud (soil sampling only)
- 2. Water wash with Liquinox
- 3. Deionized water rinse to remove Liquinox
- 4. Second rinse with deionized water
- 5. Dry with paper towels (soil sampling only).

Prior to use at the site, the brass tubes used in the modified California sampler were cleaned in WCC's laboratory by washing sequentially in dilute sulfuric acid, Liquinox and water, and deionized water. The tubes were then air dried, and stored in sealable plastic bags prior to use at the site. New end caps were carried to the site in sealable plastic bags.

Drill augers or pipes, pumps, bailers, surge blocks, and cables were all steam cleaned prior to working on each boring or well. Steam cleaning was performed by the drilling companies on the facilities steam cleaning pad.

A.8 SLUG TESTING

Slug tests were conducted on observation Wells WCC-4S, -5S, -7S, -8S, -9S, -10S, -1D, and -3D on 19 July, 30 August, and 4 October 1989. Slug testing is a relatively quick and cost-effective method of measuring actual field hydraulic conductivity (K) values. Slug test derived hydraulic conductivity (K) values are not as accurate as aquifer pump test derived values, however, they are useful in preliminary calculations and in identifying large anomalies in hydraulic conductivity (K) values.

Slug tests only measure the average horizontal hydraulic conductivity (K) in the immediate vicinity of the well. In comparison a pump test stresses the aquifer at a greater radial distance, and as a result, a more representative hydraulic conductivity value (K) is obtained.

The slug tests were performed using the following equipment:

- o DL-120-MCP Envirolabs data logger with a 25 psi pressure transducer
- o One 3.25-inch diameter x 39-inch-long sand weig' mandrel with a 1.4 gallon volume
- o Steel tripod and polyethylene rope

The weighted mandrel was used with the tripod and rope to simulate a slug of water being inserted and withdrawn from the well. The pressure transducer and data logger recorded the subsequent drawdown and recovery water level measurements of the well. One cycle of drawdown and recovery was performed on each observation well.

Data from the slug tests were evaluated using the Bouwer-Rice method (June 1976) for calculating hydraulic conductivity (K). Bouwer and Rice developed a procedure

that considers the effects from partially penetrating wells, the radius of the gravel pack, and the effective radius of influence of the test.

The Bouwer and Rice method entails solving the following equation:

$$K = \frac{r_c^2 \ln(R_e/R_w)}{2Lt} \ln(Y_o/Y_t)$$

Where:

K = hydraulic conductivity

 r_c = radius of well casing

 R_{\bullet} = effective radius of influence

 r_{m} = radius of the well boring

= length of screened interval or saturated thickness
if entire screen is not saturated

t = arbitrarily selected time from drawdown/time
 semi-log plot

The term R_{\bullet}/r_{w} , which is a function of the radius over which the drawdown in the well is dissipated, was solved using the following equation:

$$\ln(R_{\bullet}/r_{w}) = \left[\frac{1.1}{\ln(H/r_{w})} + \frac{A + B\ln[(D-H)/r_{w}]}{L/r_{w}}\right]^{-1}$$

Where:

- H = distance from base of well to Static Water Level (SWL)
- length of screen (or saturated thickness if entire screen is not saturated)
- D = thickness of aquifer
- A = constant based on value of L/r_w (see Figure A-22)
- B = constant based on value of L/r_w (see Figure A-22)

The test data were plotted on a semi-log diagram of drawdo (Y_t) versus time (t), drawdown being logarithmic (see Figures A-6 through A-21). The data should generate a straight line, although a flat "tail" is frequently observed. A drawdown (Y_t) is recorded for a selected time (t) within the straight line segment of the plot. Y_t and t are used in solving the equation for K.

The Bouwer and Rice method makes the following assumptions:

- 1. The aquifer is of constant thickness.
- 2. The soil is homogeneous and isotropic.
- 3. Flow is horizontal in the aquifer.

These assumptions are judged to be generally reasonable, recognizing that variations in aquifer thickness and anisotropic conditions will have an influence on calculate results.

A.9 PUMP TEST

The pumping well, WCC-4S, was selected because it is centrally located to the surrounding observation wells. In addition information collected during slug testing indicated the well would have a relatively high yield. Wells WCC-1S, -4S, -6S, -7S, -8S, -9S, and -1D served as observation wells.

Details of the well design for the existing ten shallow observation wells and the two deep observation wells are summarized in Table A-3. Depth of groundwater and distance to the pumping well is also included. Figure 2 shows the locations of the wells.

A 1-1/2 horsepower submersible pump was used to pump water from WCC-4S. The pump was switched on at 12:00 p.m. on 20 December 1989 and allowed to pump at 13.3 gpm for 16 hours and 30 minutes. At this rate the water level was nearly stable at a drawdown of approximately 6 feet.

The evacuated groundwater was stored in two 21,000-gallon transportable steel storage tanks. Storage requirements were estimated based on well development activities which indicated a maximum pumping rate of 4 to 5 gallons per minute. Assuming a pumping rate of up to 10 gallons per minute, Woodward-Clyde initially ordered one storage tank and figured if and when a second storage tank was required, it would be more than 24 hours after the pumping began. Because the pumping rate was greater than 10 gpm the second storage tank would have been needed before the tank rental company could respond to our request, if the Therefore, the flow rate was pumping rate was sustained. reduced to 8.5 gpm for 4-1/2 hours. After the second tank was delivered to the site, the flow rate of 13.3 was resumed and maintained for the remainder of 30 total hours of The overall time weighted pumping rate was "pumping".

approximately 12.6 gal/min. The pump was switched off at 6:00 p.m. on 21 December 1989. Measurements in the pumping well and all the monitoring wells continued until WCC-4S had recovered 99 percent of its maximum drawdown, two hours after the pump was shut off.

Water was pumped to the surface and approximately 400 feet horizontally to the storage tanks. The volume of water pumped out of WCC-4S was measured by an in-line totalizer. A total of approximately 28,000 gallons of groundwater was evacuated.

Five of the monitoring wells WCC-4S, -1S, -7S, -8S, and -1D had pressure transducers installed and connected to one of three Terra 8 data loggers to automatically measure and to groundwater. In record the depth Woodward-Clyde measured the depth to groundwater on regular intervals in all of the observation wells except WCC-1S, -4S, and -1D. This task was performed using a Soloni electric well sounder. In addition barometric pressure readings were collected at regular intervals throughout the pump test using a Swift, Model 477 barometer.

The data from each well showing a discernable reaction were analyzed using one or more of the following techniques: Recovery (Residual Drawdown) plot, Cooper-Jacob Time-Drawdown plot, and/or Distance/Drawdown plot. A summary of the results is previously presented in Table 2. Slug test values obtained earlier are included for reference.

The nearly instantaneous initial drawdown and the subsequent constant drawdown with time, precluded any valid analyses of the pumping stage drawdown in the pumping well WCC-4S.

Nevertheless the recovery data for the pumping well which did appear valid was analyzed using a residual drawdown plotting technique.

This technique utilizes a semi-log plot of the residual drawdown (in feet) vs. the ratio of t/t' (see Figure A-23) where:

t = time since pumping started

t' = time since pumping stopped

The differential change in water level (Δs) is thus obtained from the plot and used in the equation:

$$K = \frac{264Q}{\Delta s \cdot b} \tag{1}$$

where:

K = Hydraulic conductivity in gpd/ft²

O = Pumping rate, in gpm

 Δs = Differential change in water level during one log cycle of time, in feet

b = The aguifer thickness (20.65 feet at WCC-4S)

Data for the observation wells WCC-1S, -6S, -7S, and -8S were analyzed using the Cooper-Jacob Time-Drawdown techniq as shown on Figures A-24 to A-27. A calculation of μ (from the well function, Driscoll 1986) showed the technique would be appropriate in general. A Distance/Drawdown plot shows the change in drawdown as a function of distance from the pumping well. The equations used and the calculations are shown with the plot. Analytical methods used are discussed

in the literature (Driscoll, 1986; Walton, 1987). The fundamental equation for hydraulic conductivity is identical to Equation (1) above. Other equations include:

$$T = Kb \tag{2}$$

and

$$S = \frac{0.3Tt_o}{r^2} \tag{3}$$

where:

T = Coefficient of transmissivity, in gpd/ft

 $K = \text{Hydraulic conductivity in gpd/ft}^2 \text{ (Equation [1])}$

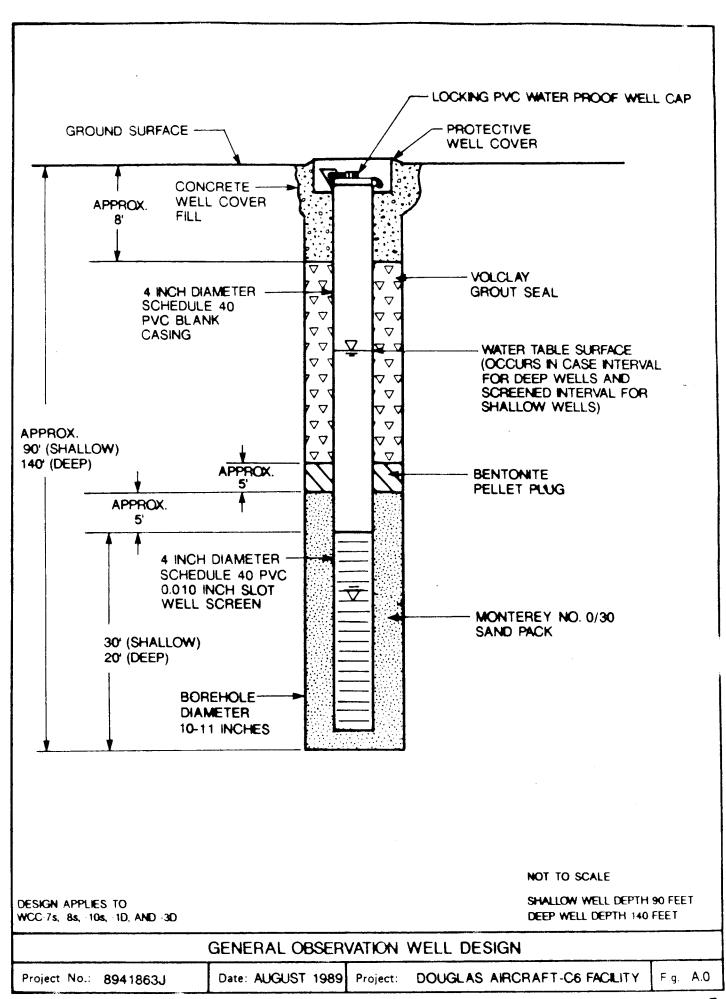
b = Saturated thickness of the aquifer tested in feet

s = Storage coefficient (dimensionless)

t_o = Time, in days, of the intercept of the extrapolated drawdown curve at zero drawdown

Distance, in feet, from pumped well to the
observation well where drawdown measurements were
made

These plots allowed the calculation of both hydrands conductivity, and storage coefficient according to Equation (1) and (3). The method of plotting and the calculation are shown on Figure A-28.



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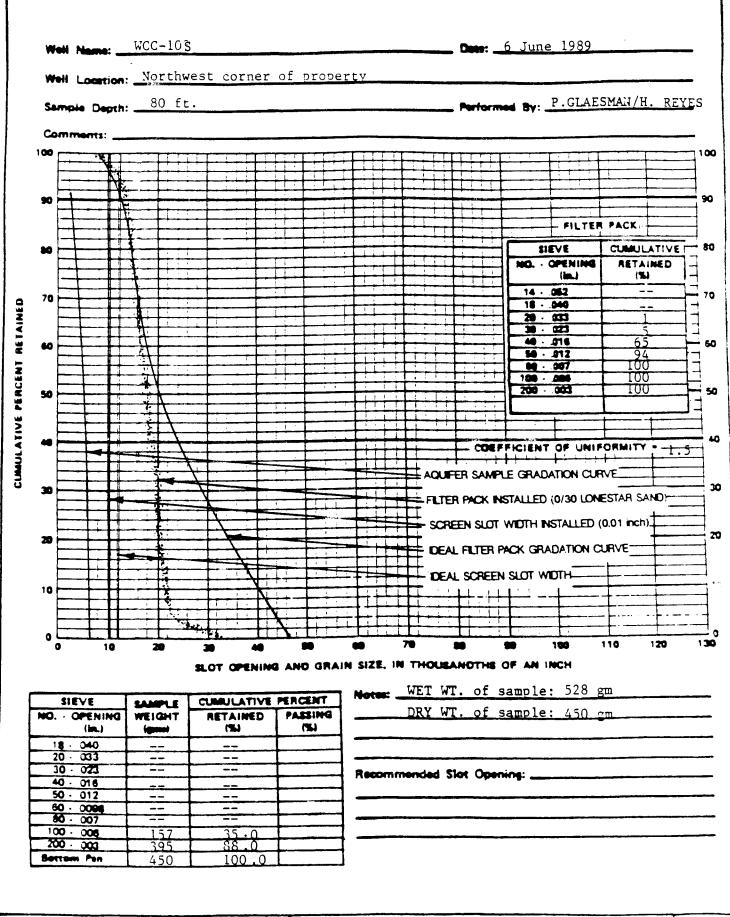
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A.2

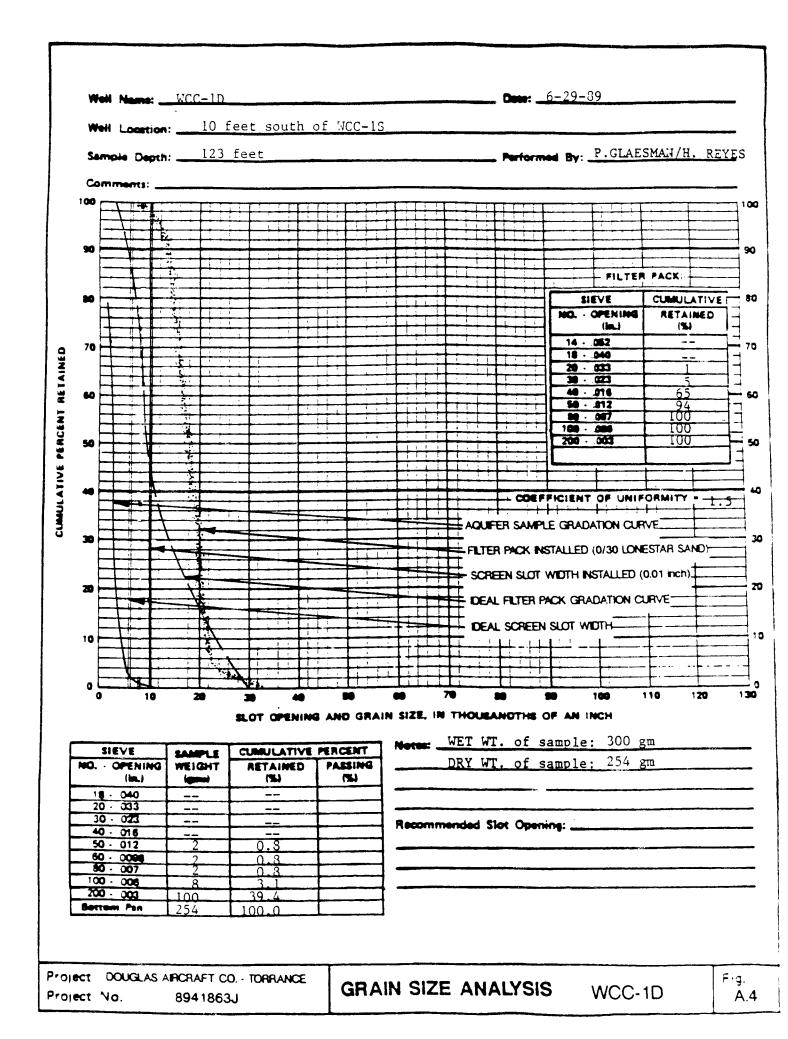


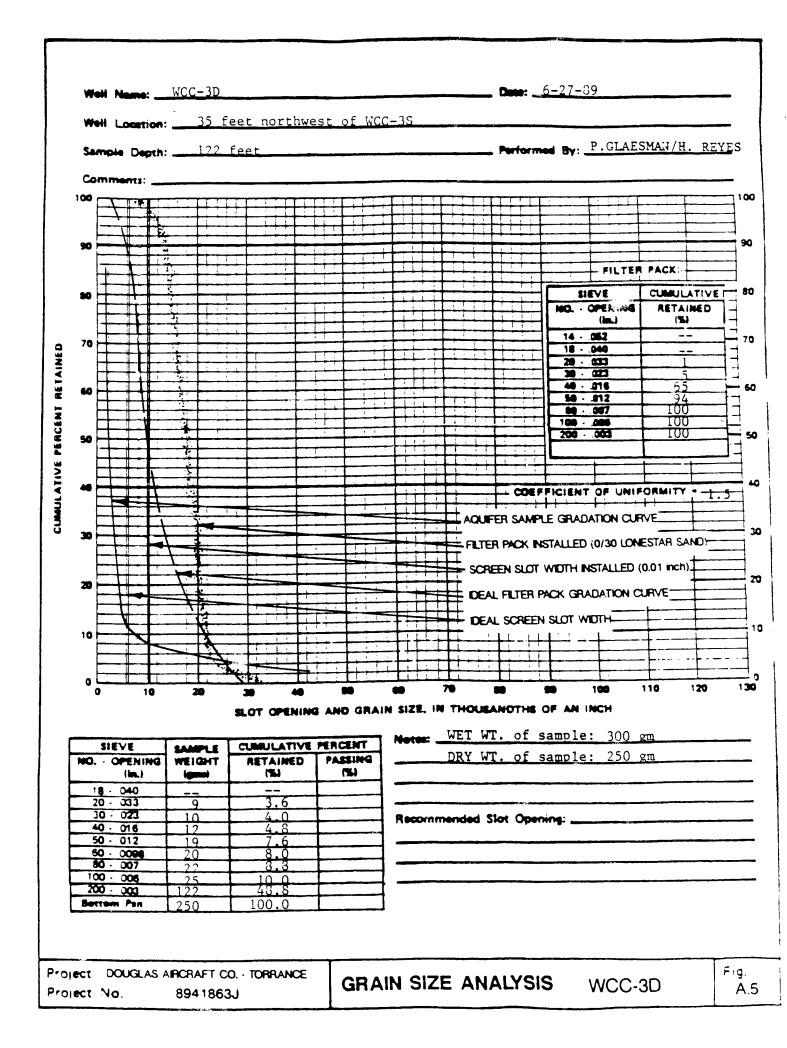
Project DOUGLAS AIRCRAFT CO. - TORRANCE Project No. 8941863J

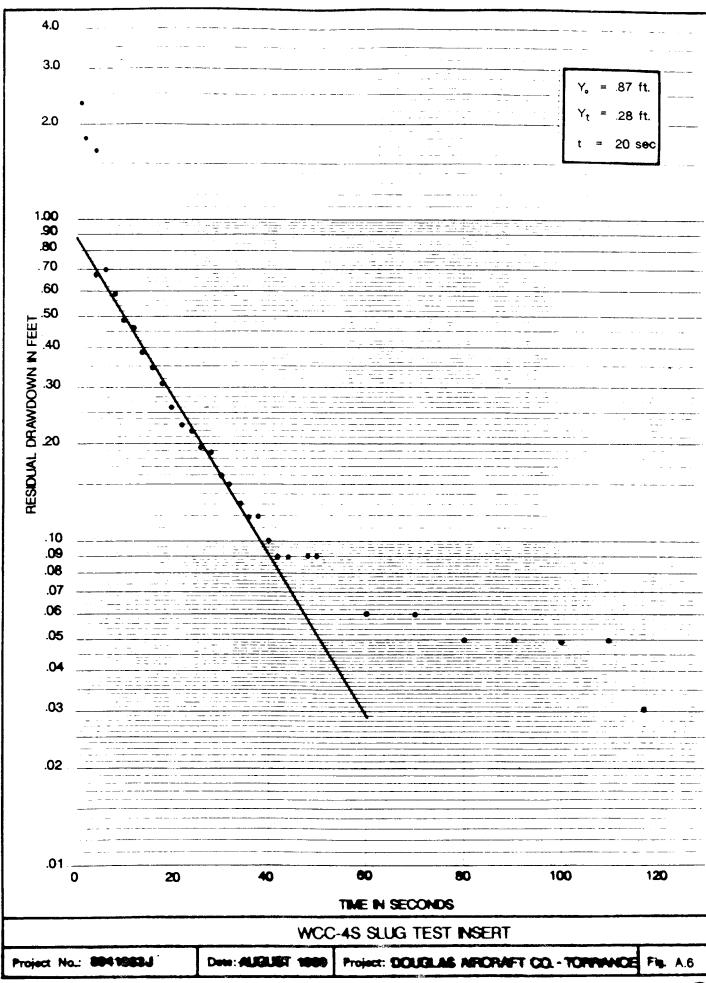
GRAIN SIZE ANALYSIS

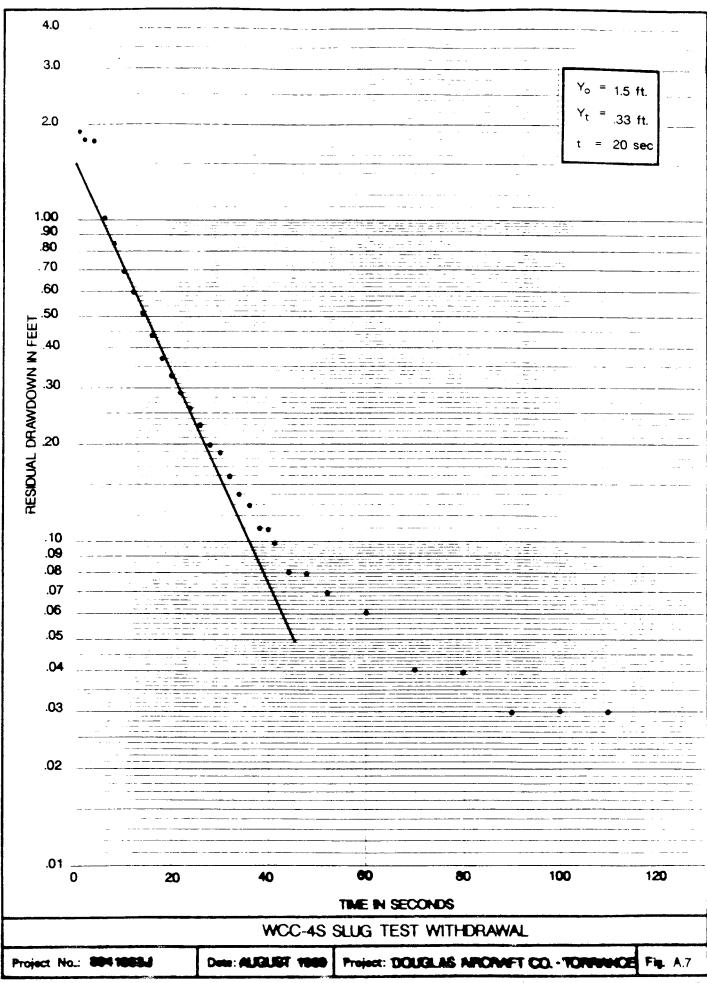
WCC-10S

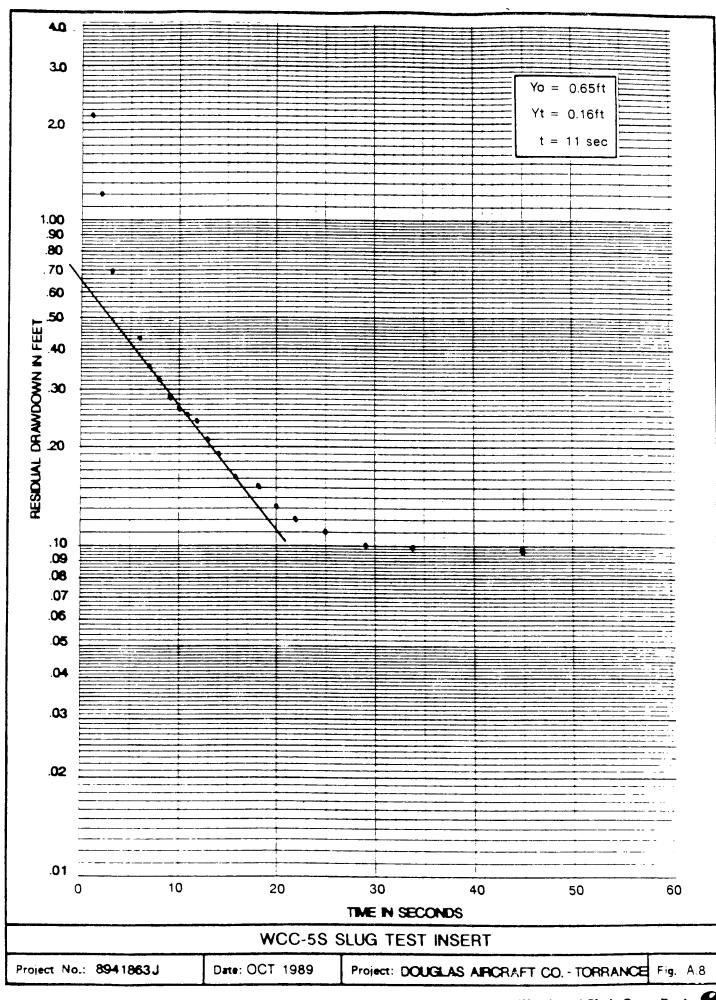
Fig. A.3

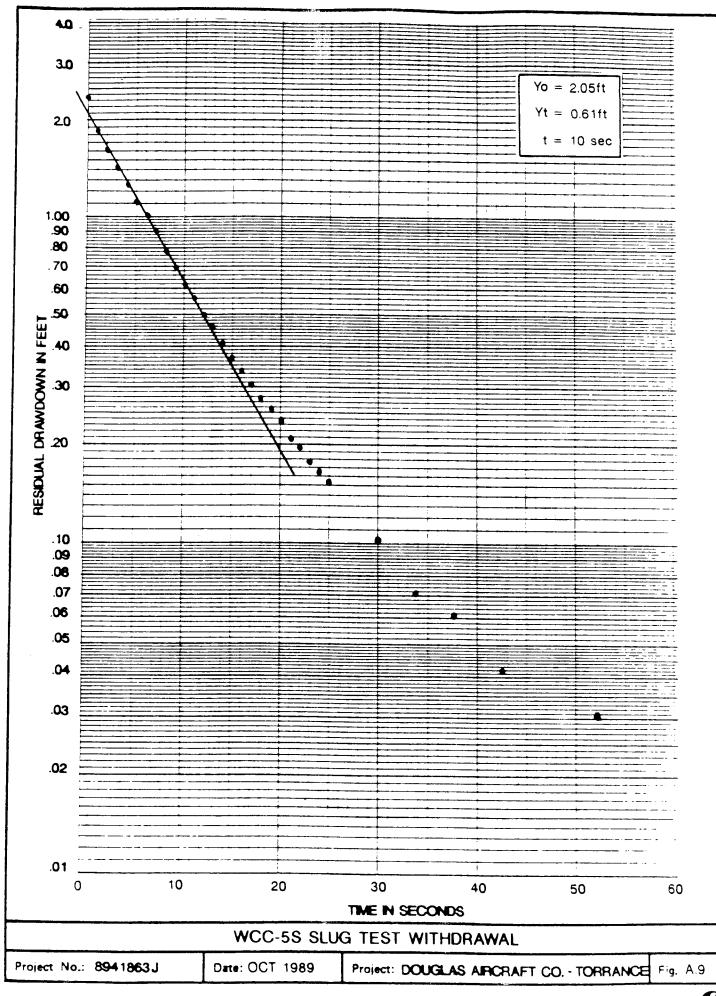


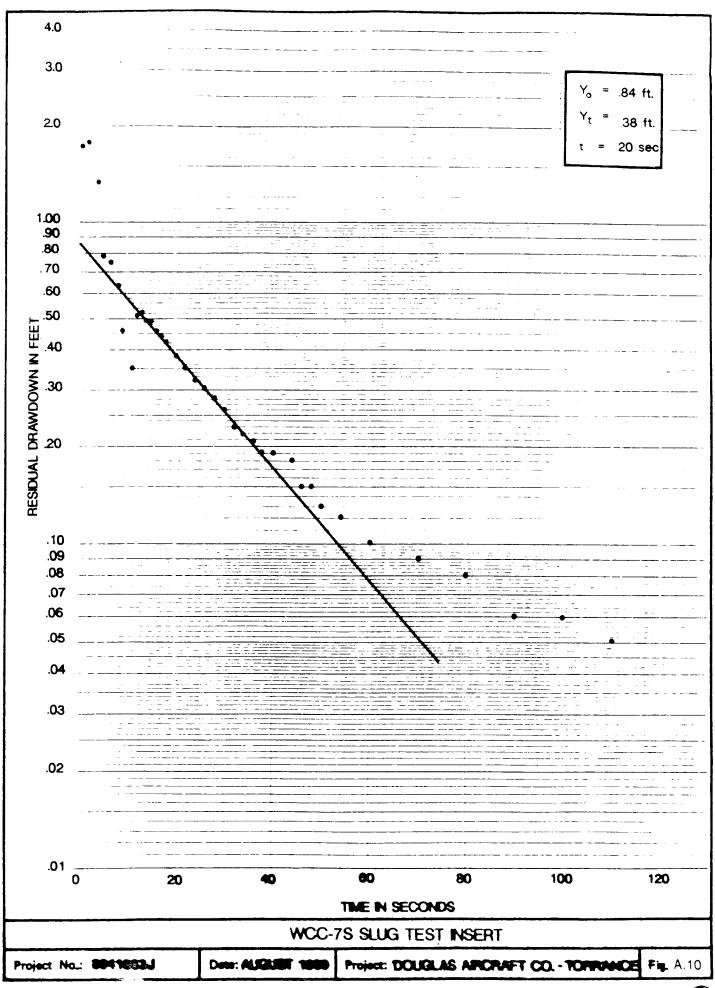


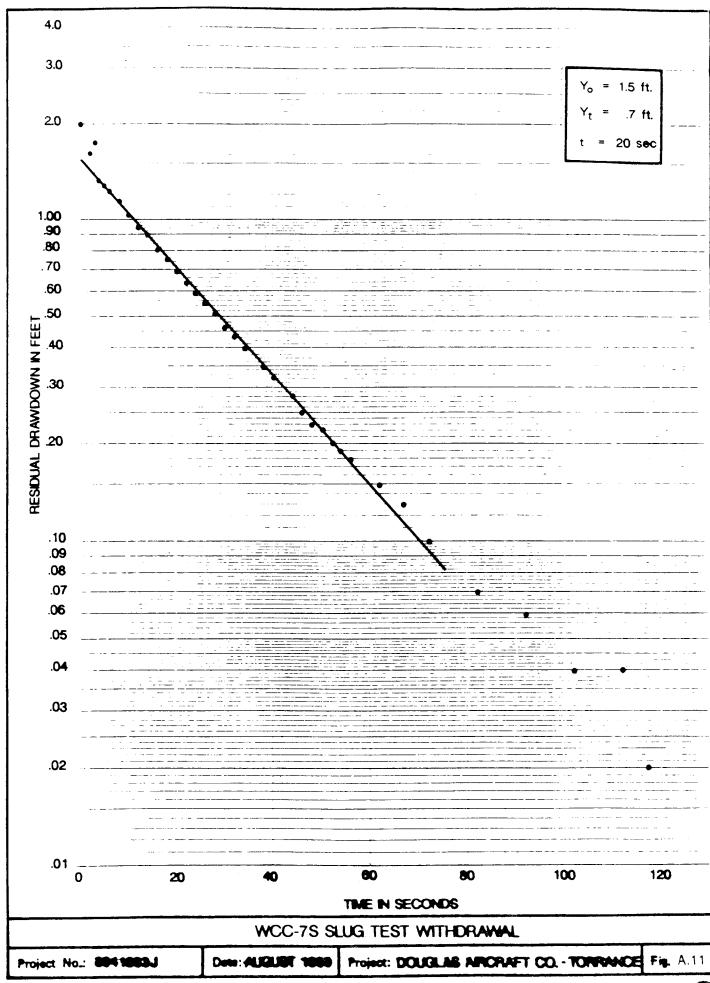


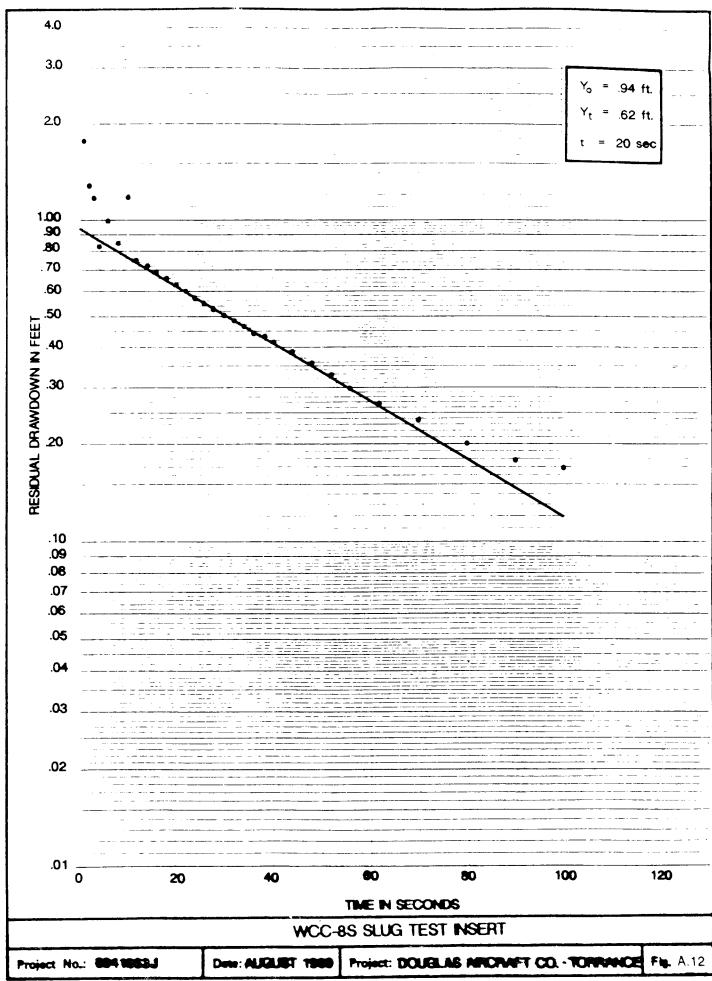


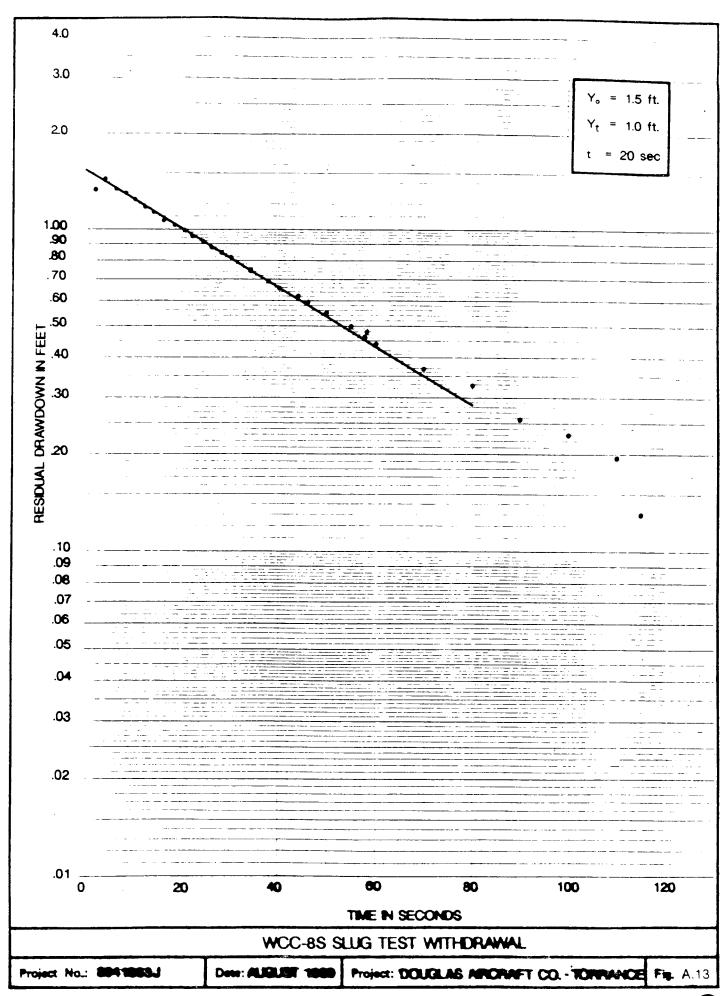


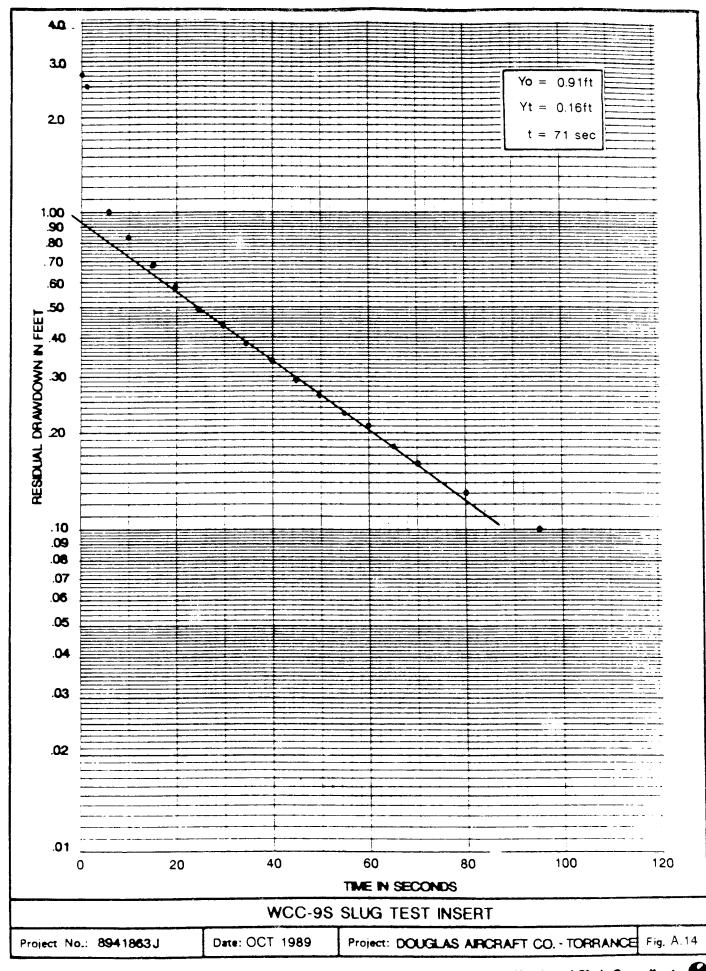


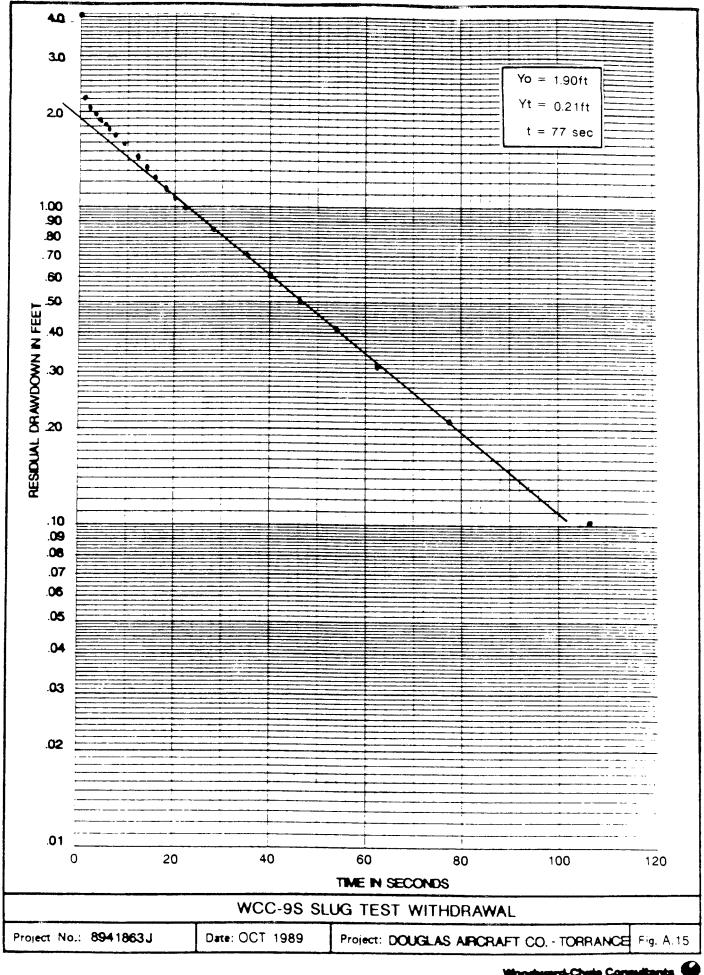


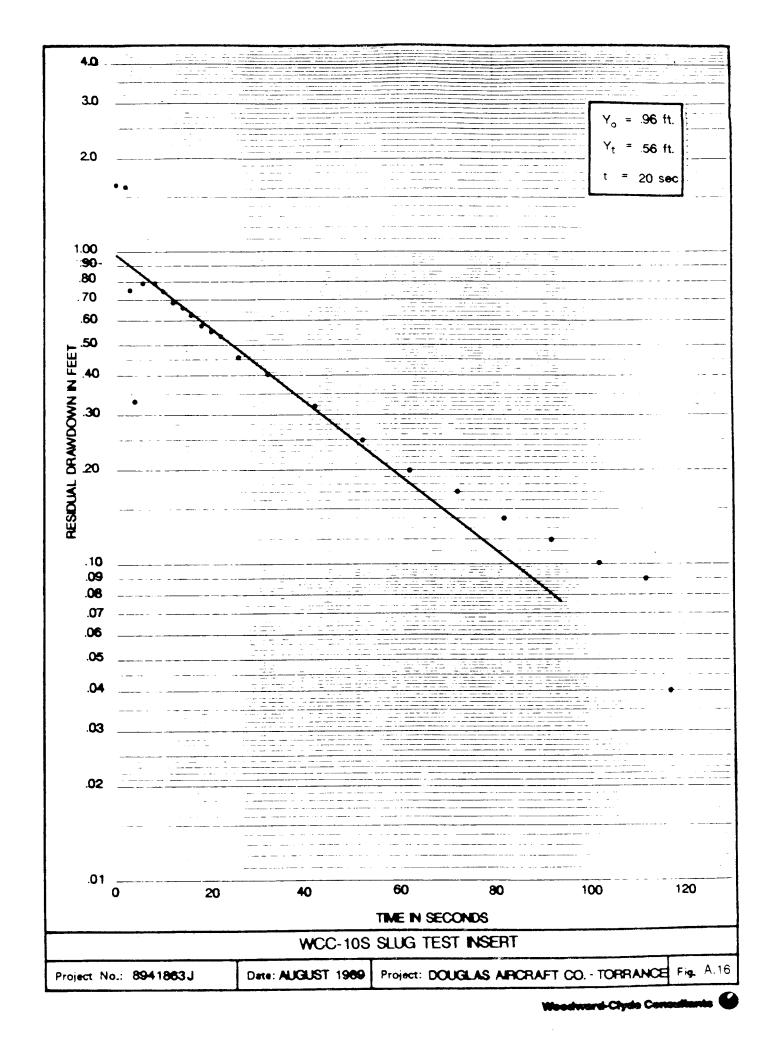


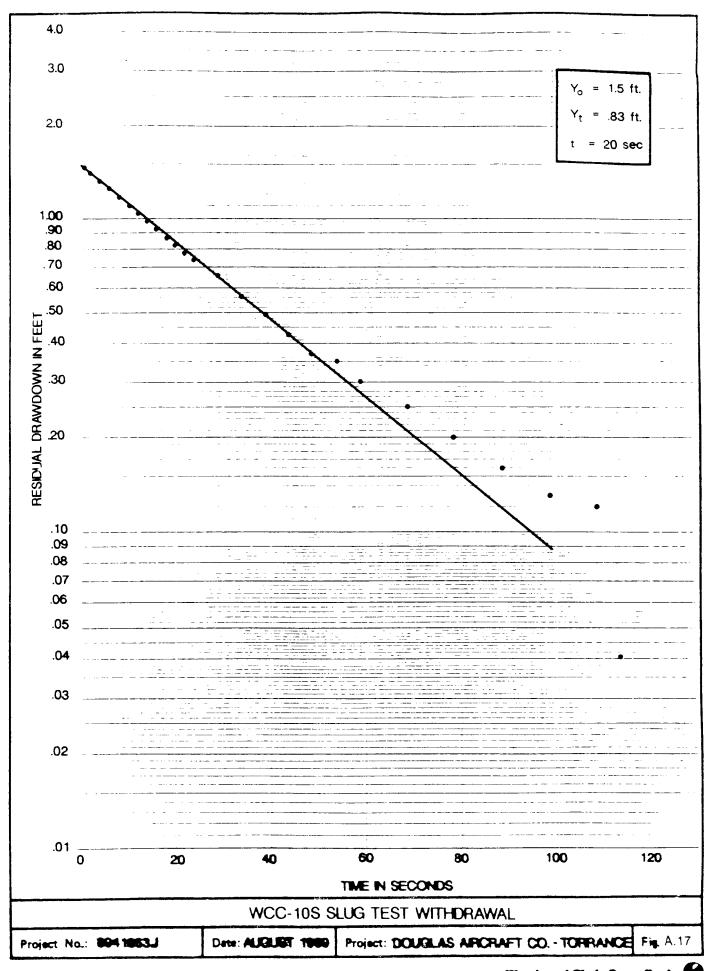


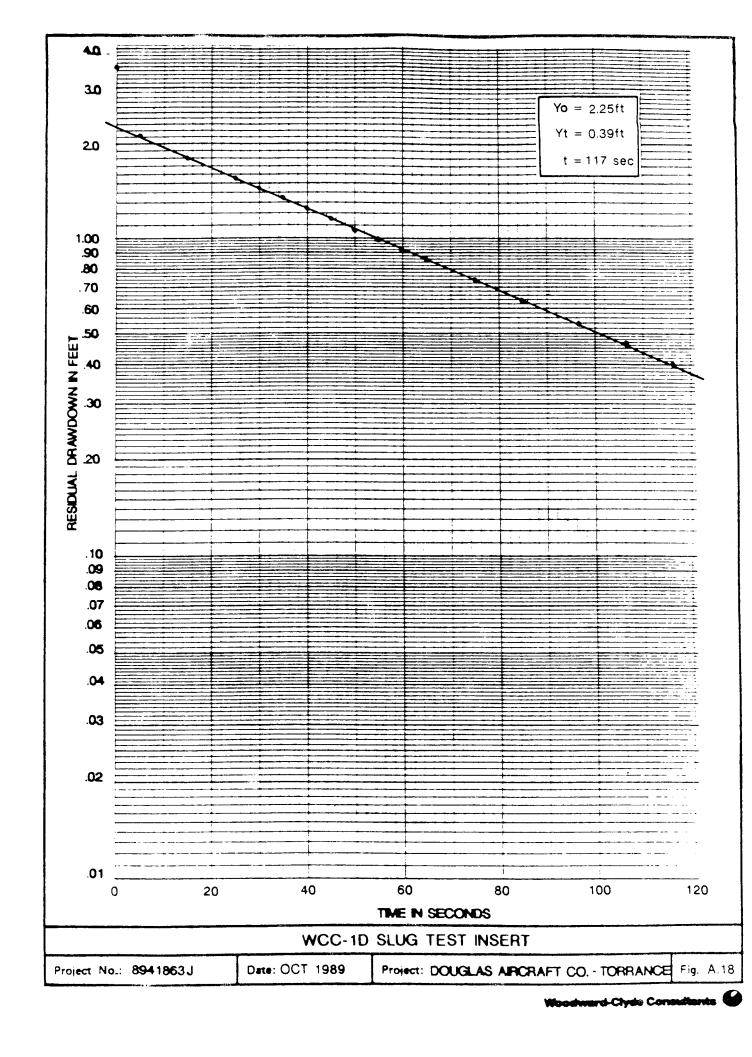


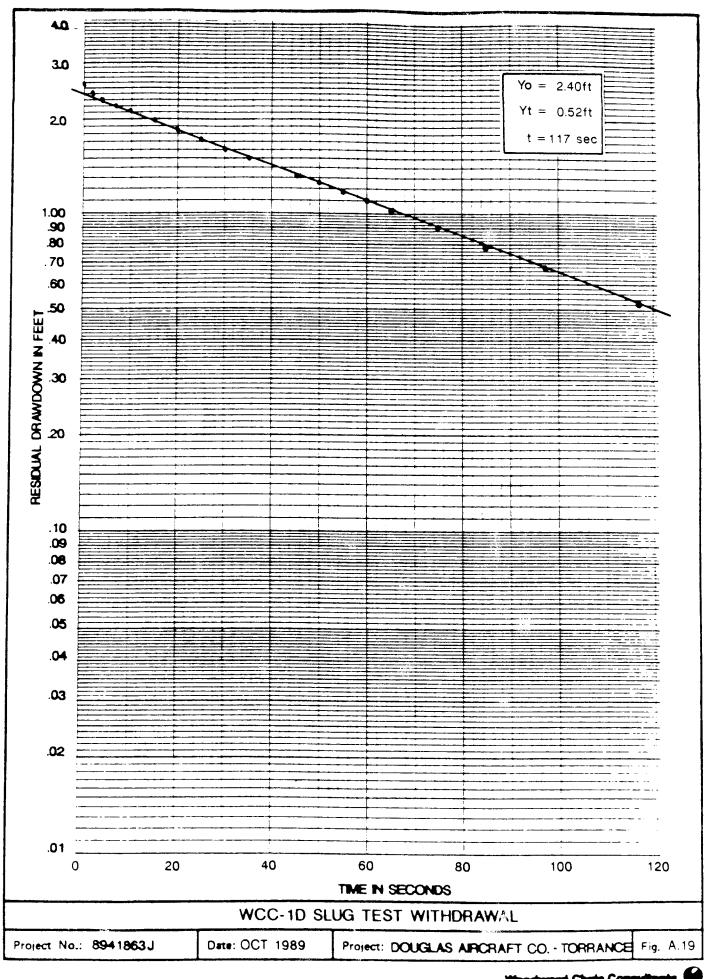


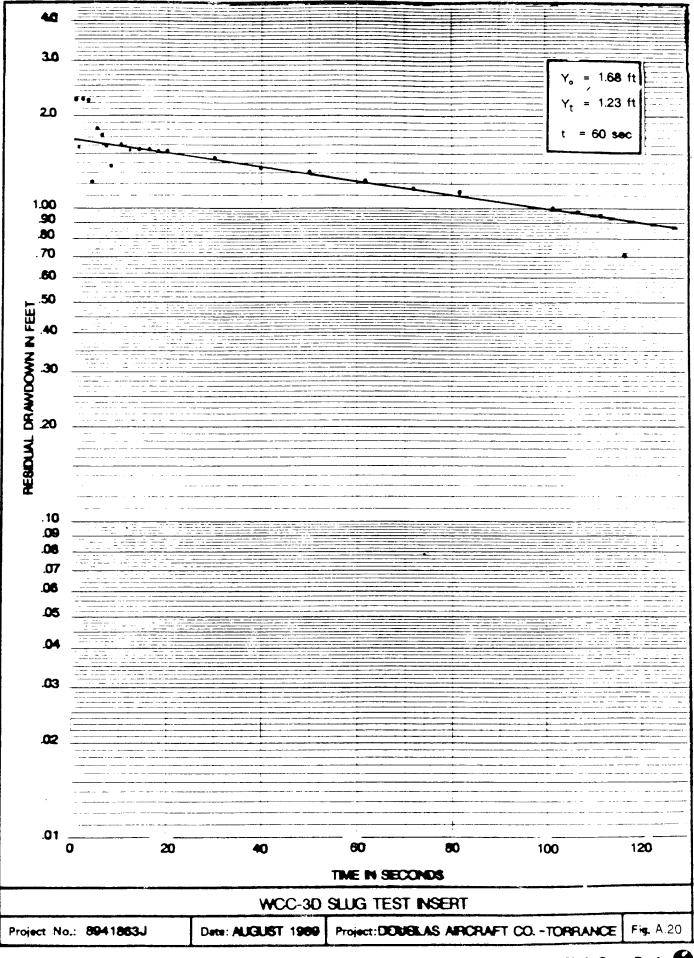


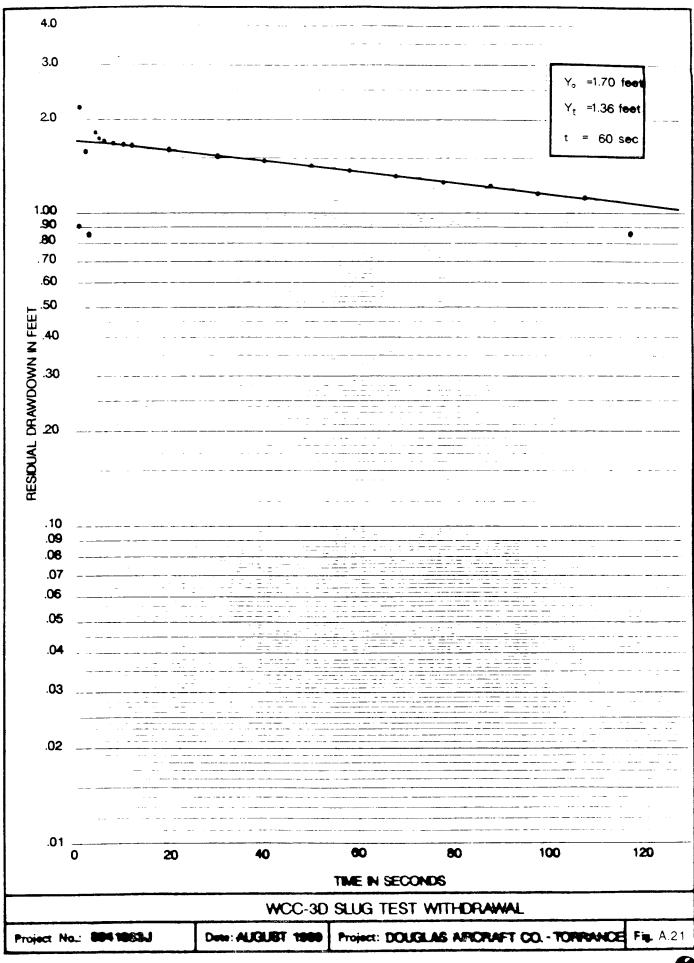


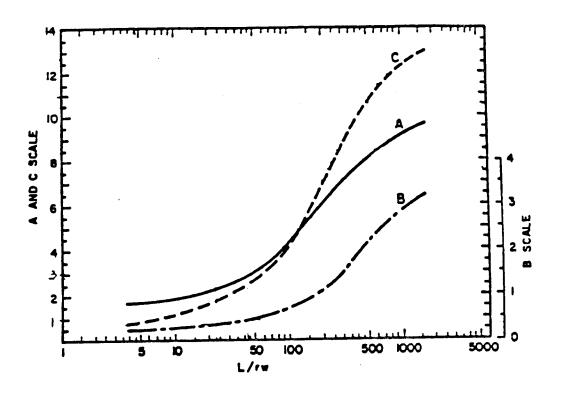






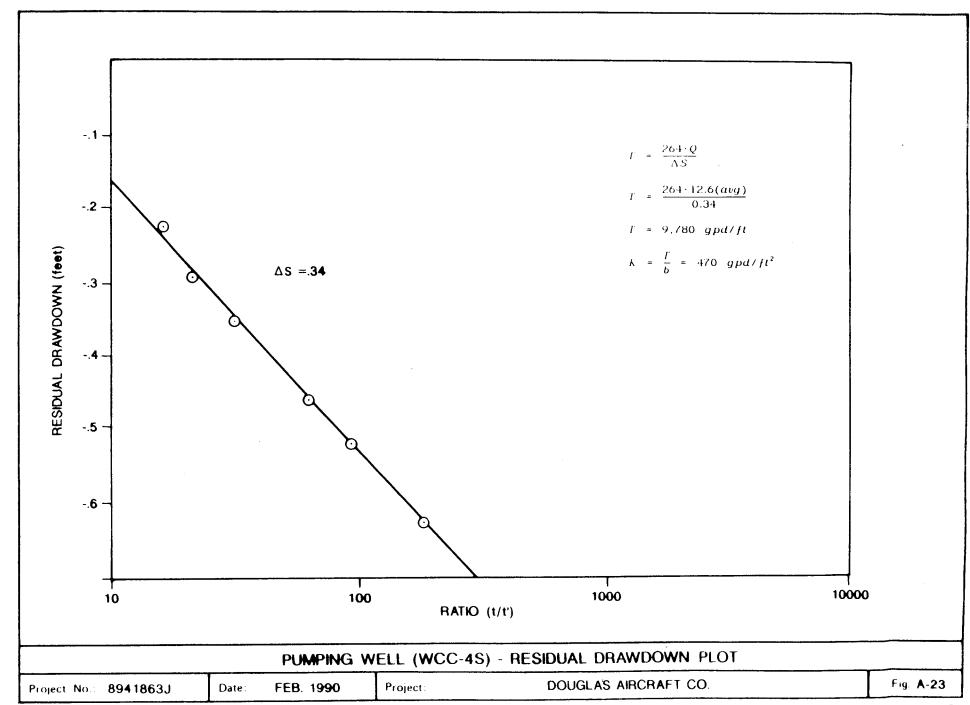


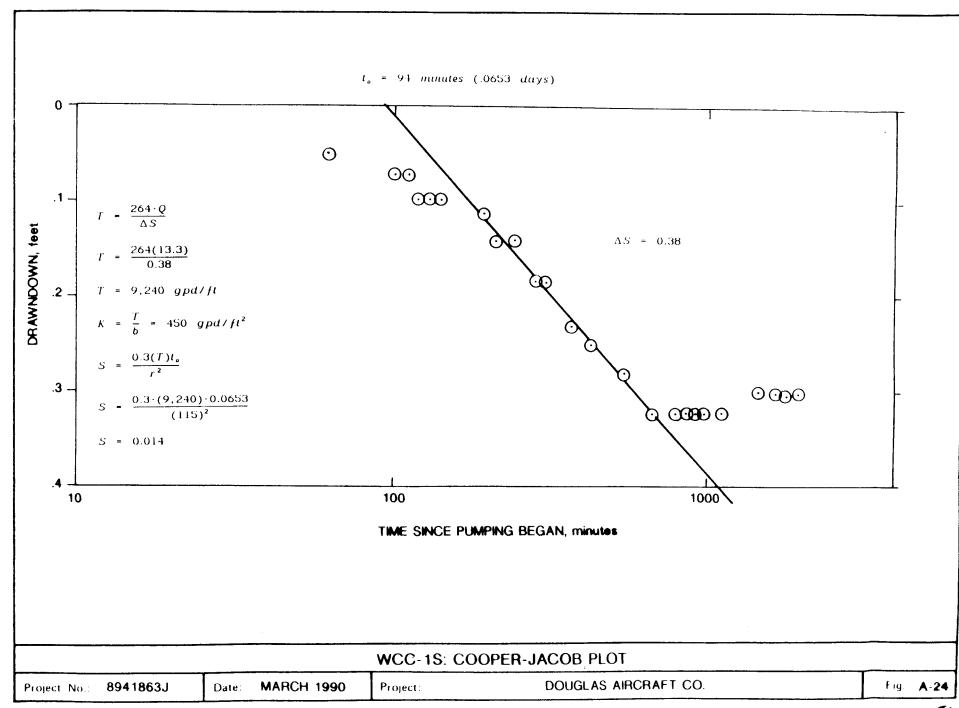




Bouwer and Rice A, B and C Coefficient Curves

Project No.: 8941863J Date: AUGUST 1989 Project: DOUGLAS AIRCRAFT COMPANY Fig. A.22

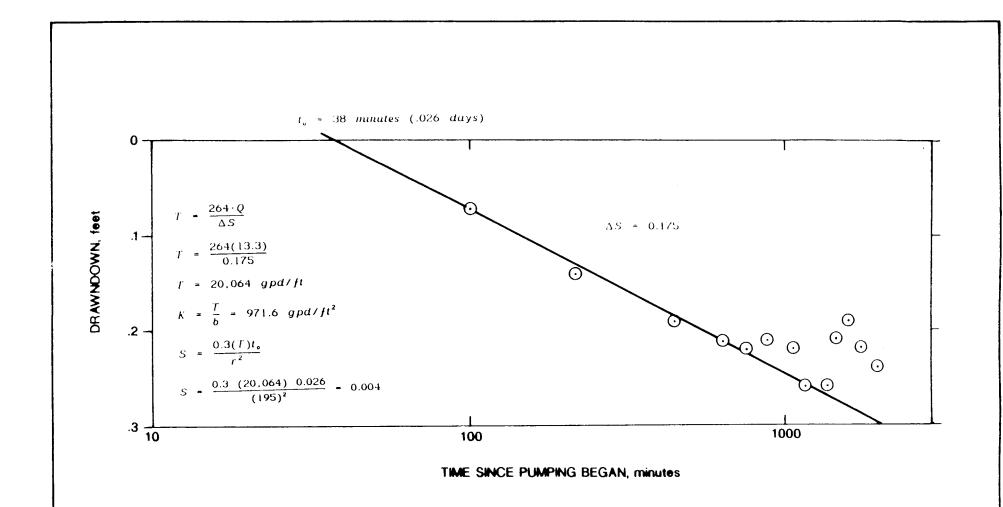




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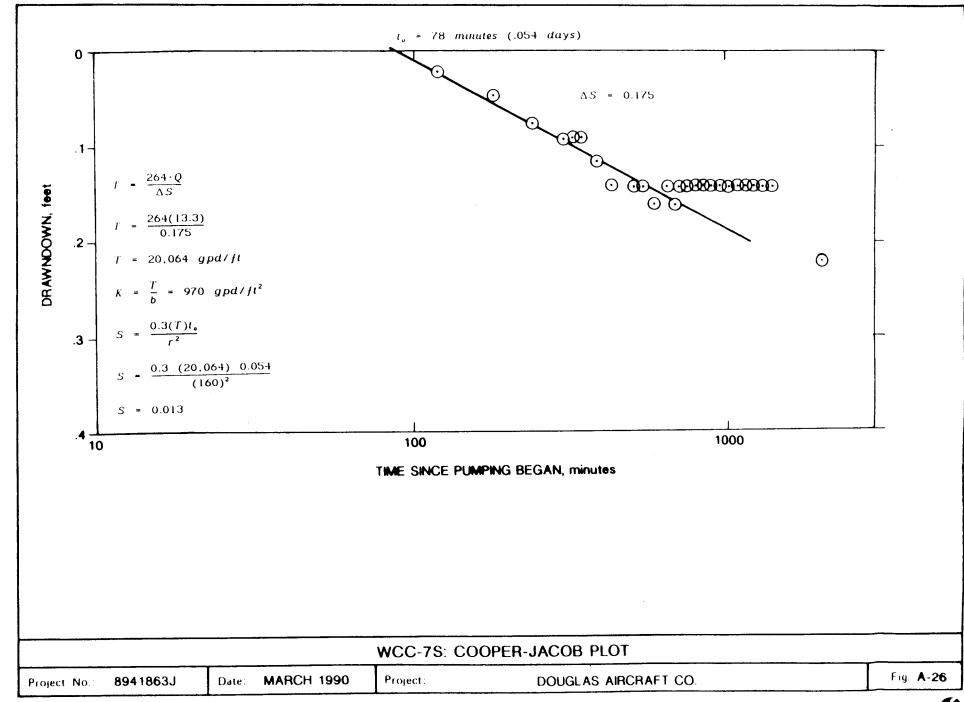
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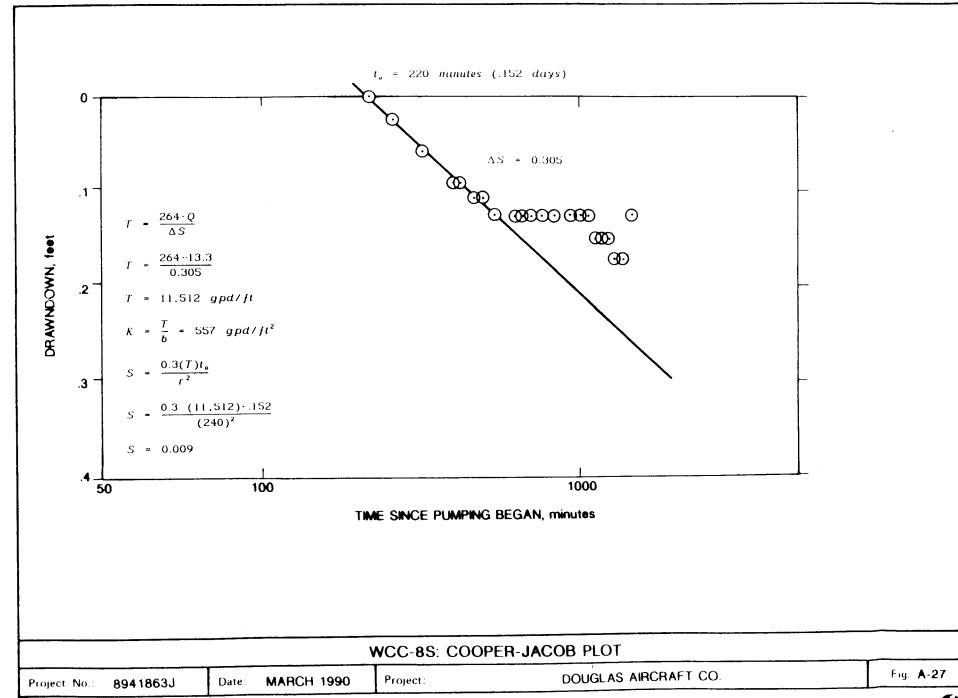
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WCC-6S: COOPER-JACOB PLOT

MARCH 1990 Project: DOUGLAS AIRCRAFT CO. Fig. A-25





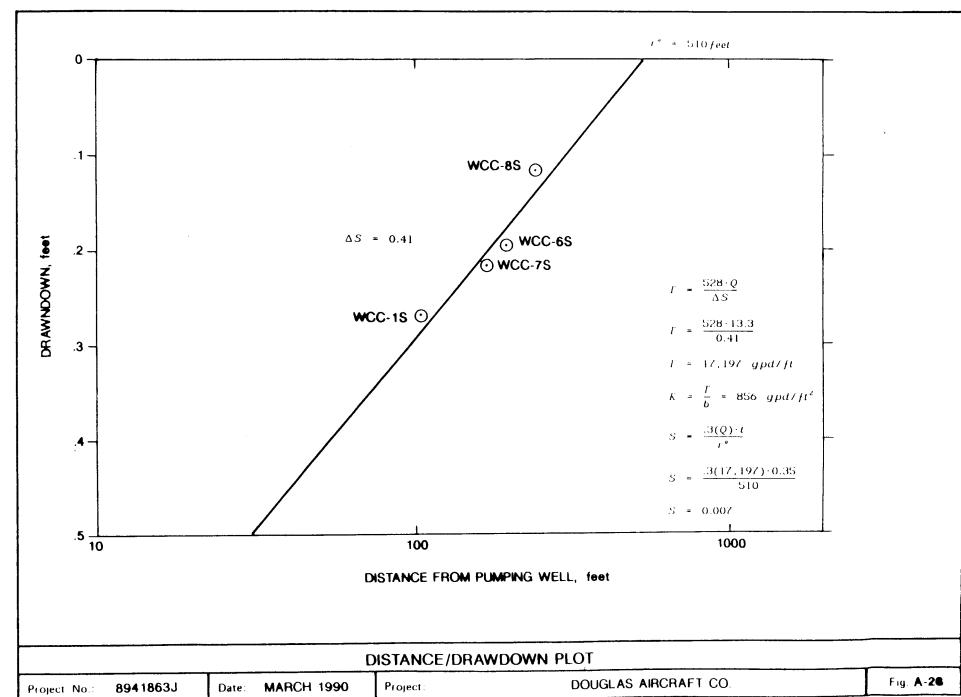


TABLE A-1
WELL DEVELOPMENT SUMMARY
DOUGLAS AIRCRAFT C6 FACILITY

Well No.	Sand Bailer and Surge Block Time (min)	Sand Bailer Volume Removed (gallons)	Pumping Time (min)	Pumping Volume Removed (gallons)	Total Removed (gal)	Comments
WCC-6S	15	45	75	400	445	Water became completely clear.
wcc-7s	60	100	70	500	600	Water became completely clear.
wcc-8s	55	70	90	430	500	Water became completely clear.
wcc-9s	15	60	70	310	370	Water became completely clear.
wcc-10s	95	190	45	370	560	Water became completely clear.
WCC-1D	15	40	540	1,170	1,210	Well was damaged by bailing on 7 July 1989. Well was repaired on 20 July 1989. Well was developed by pumping only, following repair.
WCC-3D	320	500			500	Water became slightly cloudy. Well was only pumped just before sampling, see Table A-2.

TABLE A-2
WATER SAMPLING DATA
DOUGLAS AIRCRAFT C6 FACILITY

Well No.	Sample Date	Sample Interval (gal)	Electrical Conductivity EC (µmhos)	Total Dissolved Solids TDS (ppm)	Нq	Temperature F°
wcc-1s	7/12/89	1 4 6 8 10		490 560 540 580 540	9.0 7.2 7.2 7.2 7.2	74.5 74.7 74.3 74.7 74.3
	8/23/89	2 4 6 8 10	1220 1320 1340 1330 1330		7.3 7.3 7.3 7.3 7.3	71.1 71.0 71.0 70.6 70.6
WCC-2S	7/11/89	15 25 35 40		310 320 320 320	7.3 7.2 7.2 7.2	72.1 72.0 72.0 71.6
	8/22/89	10 20 30 40	760 760 760 760		7.2 7.3 7.3 7.3	70.4 70.4 70.2 70.2
WCC-3s	7/12/89	10 20 30 40		550 550 560 560	6.8 6.7 6.7 6.7	73.9 73.4 73.4 73.4
	8/23/89	10 20 30 40	1270 1270 1280 1280		6.8 6.8 6.9 6.9	70.5 69.9 70.2 70.2
WCC-4S	7/11/89	15 25 35 45		430 440 420 450	7.2 7.2 7.2 7.2	72.7 72.9 72.9 73.0
	8/23/89	10 20 30 40	960 990 1000 1005		7.2 7.2 7.2 7.2	69.8 69.8 69.2 69.4
WCC-5S	7/11/89	15 25 35 45		380 370 390 390	7.3 7.3 7.3 7.3	73.4 72.0 72.1 72.3
	8/22/89	15 25 35 45	885 900 900 900		7.2 7.3 7.3 7.3	69.1 69.1 69.2 69.4
WCC-6S	10/6/89	10 20 30 40	1,180 1,190 1,190 1,190		7.0 7.1 7.1 7.1	69.7 69.7 69.8 69.8

TABLE A-2 (continued)

Well No.	Sample Date	Sample Interval (gal)	Electrical Conductivity EC (μπhos)	Total Dissolved Solids TDS (ppm)	рН	Temperature F°
WCC-7S	7/11/89	15 25 35 45		540 520 510 510	7.2 7.1 7.2 7.2	72.5 72.5 72.7 72.5
	8/23/89	10 20 30 40	1180 1225 1220 1200		7.1 7.1 7.2 7.2	68.8 69.0 68.8 69.5
wcc-8s	7/11/89	15 25 35 45		390 390 380 380	7.3 7.2 7.2 7.2	72.5 72.7 72.5 72.7
	8/23/89	10 20 30 40	880 865 865 875		7.2 7.2 7.2 7.3	69.9 69.6 69.6 69.6
wcc-9s	10/6/89	15 25 35 45	1,110 1,070 1,050 1,000		7.1 7.2 7.2 7.2	69.1 69.2 69.0 69.1
WCC-10S	7/11/89	1 10 25 35 40 45		420 450 420 410 410 420	7.2 7.3 7.3 7.3 7.2	70.9 70.3 70.3 70.7 70.5 70.5
	8/22/89	10 20 30 40	1000 1010 1040 1040		7.2 7.2 7.3 7.3	69.1 69.1 68.9 68.8
WCC-1D	7/24/89	15 75 175 275 350	760 720 770 770 770 770		7.2 7.3 7.4 7.5 7.5	70.6 71.0 71.3 71.1 71.1
	8/21/89	20 40 60 80 100 120	760 756 730 730 720 720 720		7.4 7.4 7.5 7.5 7.4 7.4	70.1 69.6 69.7 69.2 69.7 69.8 69.8
WCC-3D	7/25/89	10 50 100 200 300 400 500	770 760 780 780 760 750 750		7.4 7.2 7.4 7.6 7.4 7.6 7.8	69.6 70.2 70.3 70.4 71.9 70.2 70.8
	8/21/89	20 40 60 80 100 120 140	710 715 715 720 720 715 715		7.3 7.4 7.4 7.4 7.4 7.4	69.5 69.2 69.3 69.0 69.3 69.8 69.1

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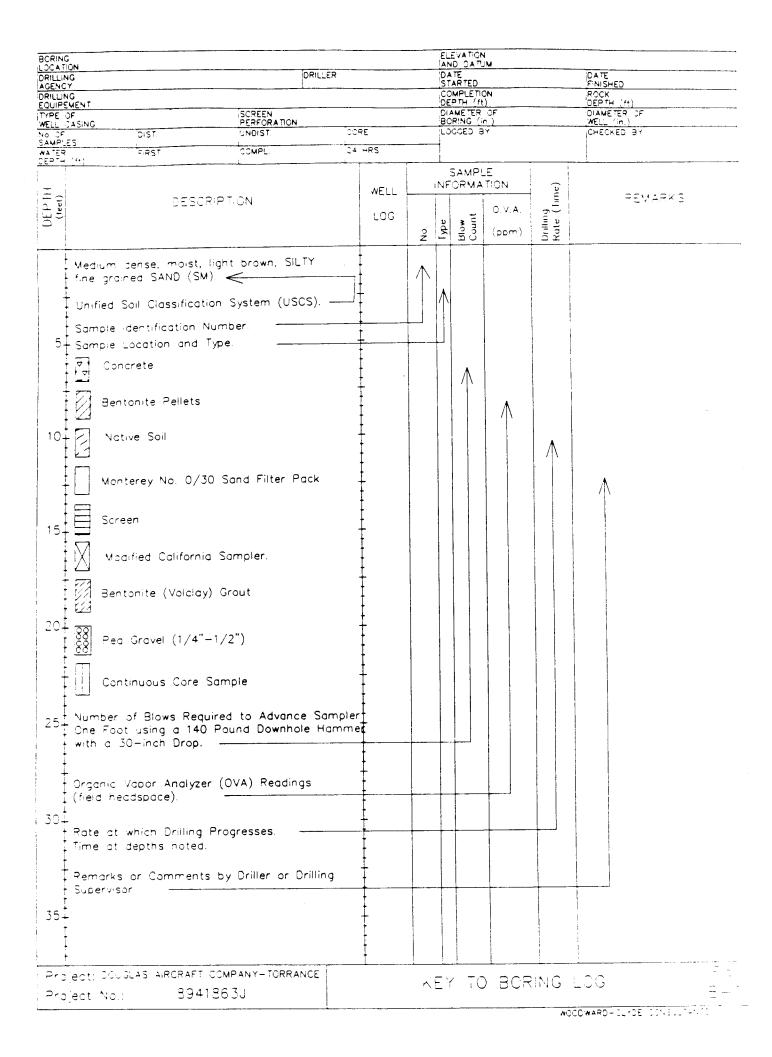
TABLE A-3
SUMMARY OF WELL CONSTRUCTION DETAILS

Well No.	Distance from WCC-4S* (feet)	Depth of Well (feet)	Screened Interval (feet)	Screen Slot Size (inches)	Diameter of Well Casing (inches)	Diameter of Filter Pack (inches)	Filter Pack Material
WCC-1S	115	88.5	78.5-88.5	0.01	2	10	No. 12 Silica sand
WCC-2S	675	90.5	70.5-90.5	0.01	4	10	No. 0/30 Lonestar sand
WCC-3S	220	89	69-89	0.01	4	10	No. 0/30 Lonestar sand
WCC-4S (pumping well)		90.5	70.5-90.5	0.01	4	10	No. 0/30 Lonestar sand
WCC-5S	250	91	61-91	0.01	4	10	No. 0/30 Lonestar sand
WCC-6S	200	91	60-90	0.01	4	11	No. 0/30 Monterey sand
WCC-7S	160	90	59.5-89.5	0.01	4	10	No. 0/30 Lonestar sand
WCC-8S	240	89.5	60-90	0.01	4	10	No. 0/30 Lonestar sand
WCC-9S	525	90	120-140	0.01	4	10	No. 0/30 Monterey sand
WCC-10S	2,020	90	60-90	0.01	4	10	No. 0/30 Lonestar sand
WCC-1D	100	140	120-140	0.01	4	10	No. 0/30 Lonestar sand
WCC-3D	250	140	120-140	0.01	4	10	No. 0/30 Lonestar sand

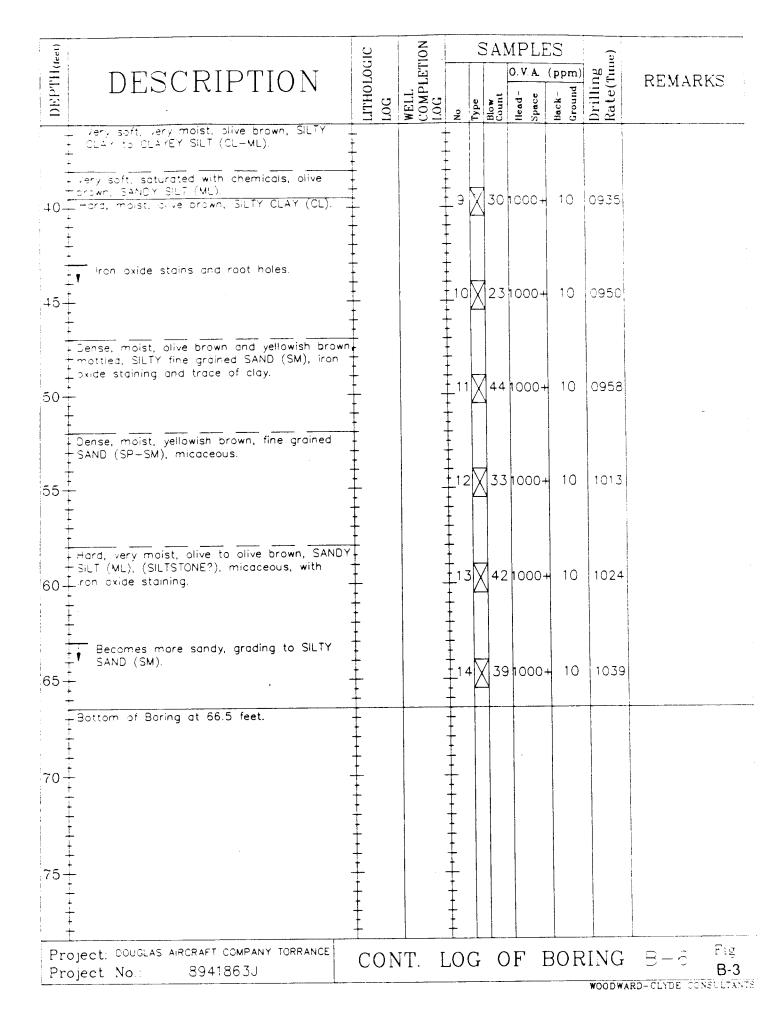
Measured from well locations plotted on site map provided by DAC.

APPENDIX B

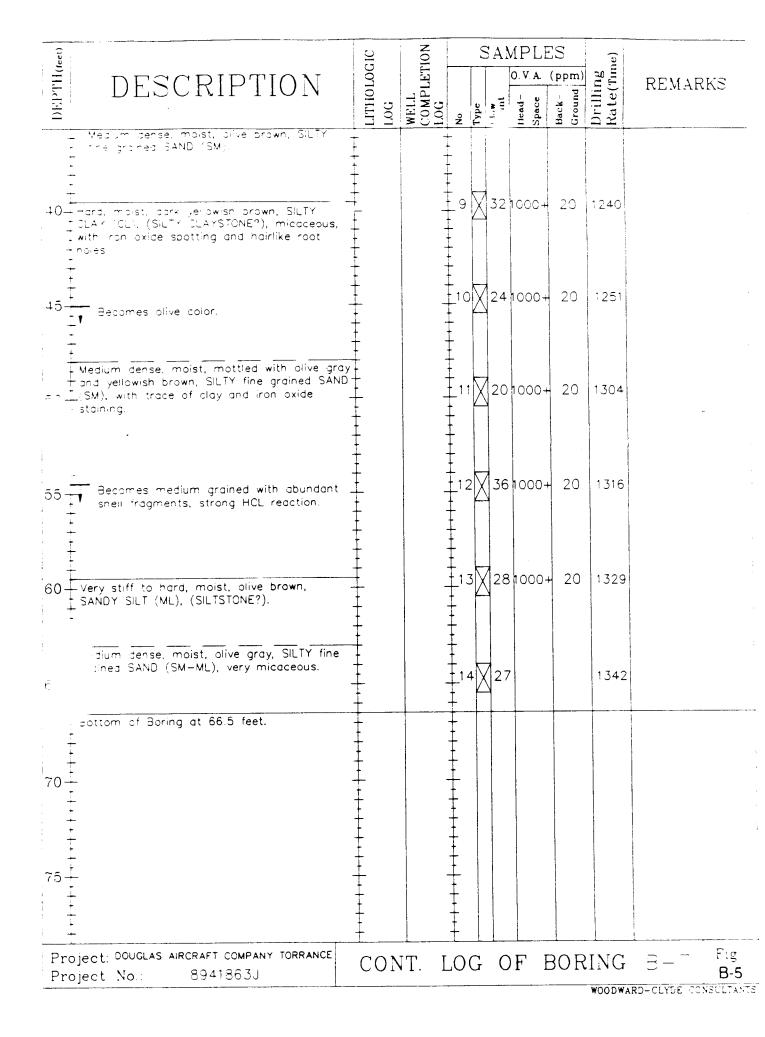
BORING LOGS

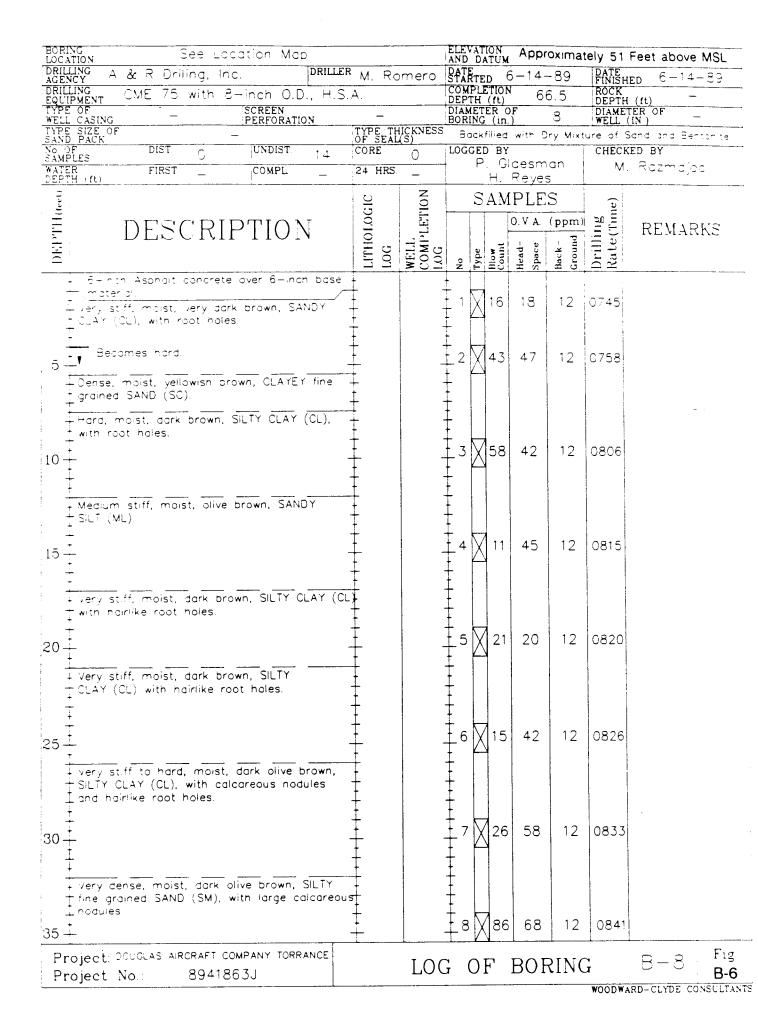


BORING See Location Map		ELEV AND	ATIO DA	NUI	App	roxima	itely 51	Feet above MSL
DRILLING A & R Onling, no. DRILLER M. Ro	mero	DATE STAR COM			5-13-		DATE	iED 6-13-39
DRILLING CME 75 with 8-1000 O.D., H.S.A. TYPE OF SCREEN PERFORATION -		DEPT	H ((t))F	5.5 8	ROCK DEPTH DIAME	TER OF
WELL CASING PERFORATION TYPE SIZE OF TYPE TH SAND PACK OF SEAL	ICKNESS	BORI					WELL ure of 3	(IN) ————————————————————————————————————
No OF DIST - UNDIST - CORE	C	LOGO			aesm	ca		KED BY . Razmajas
WATER COMPL 24 HRS.	-	!			Reyes	5		
DESCRIPTION BY	LETION		<u>S.</u>		PLE		ine)	
DESCRIPTION DESCRIPTION	L PLE		-	j	0. V. A.		hng e(Ti	REMARKS
3G	WELL COMPI	NO.	Type	Blow Coun	Head- Space	Back- Ground	Drillin Rate(
= 5 - nith Asphait concrete. = Loose, maist, plive prown, fine to medium	-	+						
I grained SAND to SILTY SAND (SP-SM).	-	1	X	7	100	10	1080	
- very loose, moist, olive prown, medium	-	<u> </u>						
Tigrained SAND (SP).	_	2	X	2	120	10	0815	
-		 		ļ			!	
<u> </u>		+						-
+ Stiff to hard, moist, dark plive gray,		‡ † 3		11	1000+	10	0819	
10 TOLAY (CH).	-		Д	1 1	1000+	10	70.3	
		+						
+ Vedum dense, maist, dark yellowish brown,		‡						
+ SILTY fine grained SAND (SM), to SANDY SILT+		‡4	X	13	1000+	10	0824	
Becomes discolored to dark olive gray, with trace of clay.	}	+						Strong chemical odor
+ Stiff to very stiff, moist, dark yellowish brown		Ŧ						
to olive brown, SILTY CLAY (CL).		‡						
20		<u>†</u> 5	M	11	1000+	10	0900	
‡ ‡		+						
<u> </u>		Ŧ						
- Medium stiff to stiff, very moist, ofive brown, - SANDY SILT (ML).		‡ 6	М	7	1000+	10	0910	
25 -		+ 0	Å	/	10004		0910	
<u> </u>		Ŧ						
Loose, moist, light gray, CLAYEY fine grained		‡			i			Encountered mixture
; †SAND (SC).		<u>†</u> 7	M	5	1000-	10	0917	of silical sand and bentonite powder
30 +		+						It is probably the backfill material
- Very soft, very moist, olive brown, SILTY CLAY		‡						from adjacent boring.
THE TO CLAYEY SILT (CL-ML).	}	‡						
35 +		+8	X	1	1000-	+ 10	0925	
Project: DOUGLAS AIRCRAFT COMPANY TORRANCE	IOC	ا ي) F	 	BOF	SINC	7	∃-6 Fig
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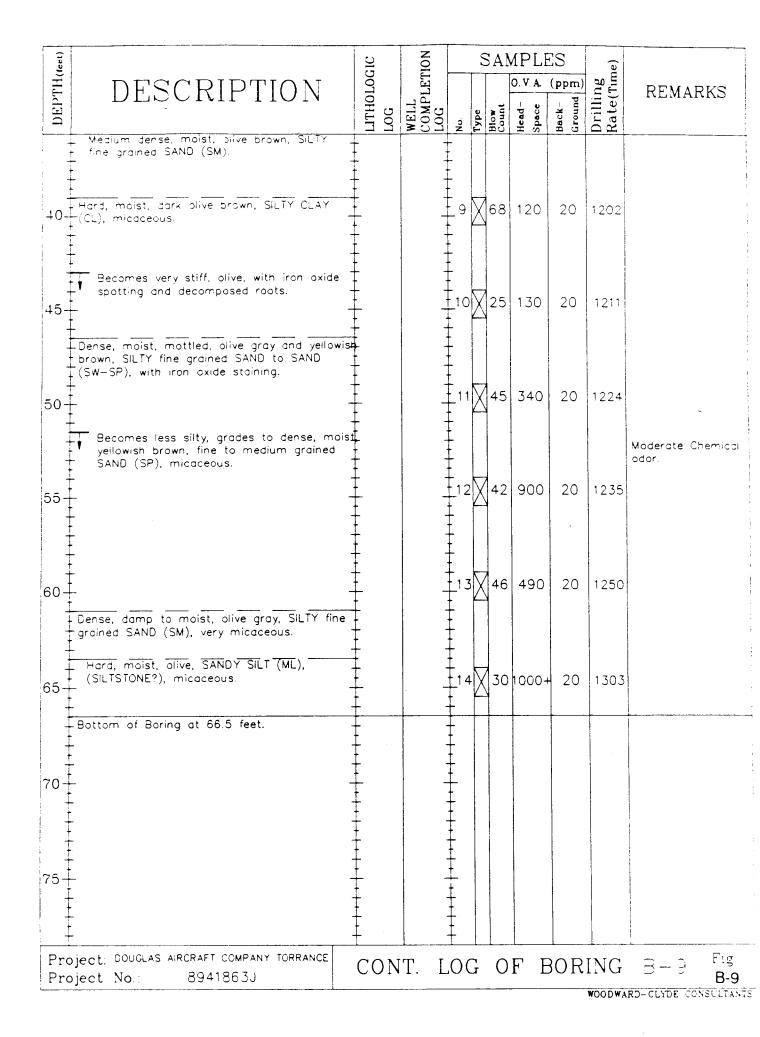
See Location Mod		ELEVATION AND DATUM	Approxima	itely 51 Feet above MSL
DRILLING CMS 75 MAG 2		COMPLETION	5-13-89	DATE FINISHED 6-13-89
TYPE OF SCREEN WELL CASING PERFORMINA		DEPTH (ft) DIAMETER O	99.5 F	ROCK DEPTH (ft) DIAMETER OF
TYPE SIZE OF TYPE SAND PACK	YPE/THICKNESS	BORING (in. Backfilled		ture of Sand and Bentante
SAMPLES UNDIST. 14 CO	ore o	LOGGED BY	aesman	CHECKED BY
2	4 HRS _	H	Reyes	M. Razmajas
	LITHOLOGIC LOG WELL, SOMPLETION		PLES	ne)
DESCRIPTION	10 C		0.VA. (ppm)	REMARKS
	LITH LOG WELL COMI	No. Type Blow Count	Head- Space Back- Ground	REMARKS REMARKS
Divery is ff. moist, dark yellowish brown to the dark gray, CLAY (CH).		1 X 15	60 20	1142
Becomes mottled with from oxide stains. T				**************************************
graphack stains of decomposed roots.		2 23	80 20	1149
Hard, moist, dark yellowish brown, SILTY = 3LAY (SL).		-		
<u> </u>				÷ .
10 +		3 32	90 20	1155
	+			
15		4 🛛 39	90 20	1202
Hard, maist, dark yellowish brown, SANDY SUT (ML)	+			1202
÷ †	+			
20 +		5 24	110 20	1209
÷ ÷ +	1			
† †	+			
25 🕂	+	6 17 1	120 20	1215
‡				
Medium dense, moist, olive brown, SILTY fine grained SAND (SM).	+	7 2710	000+ 20	1224 Strong chemical odor
j g an 33 3 an 5 (3 m).				,
<u></u>	‡			107
Drain at 2010 AS APROATE CONDAIN TORS WAS		8 24 10	00+ 20	1231
Project: OCUGLAS AIRCRAFT COMPANY TORRANCE Project No: 8941863U	LOG	OF B	ORING	3-7 Fig
				B-4 OODWARD-CLYDE CONSULTANTS

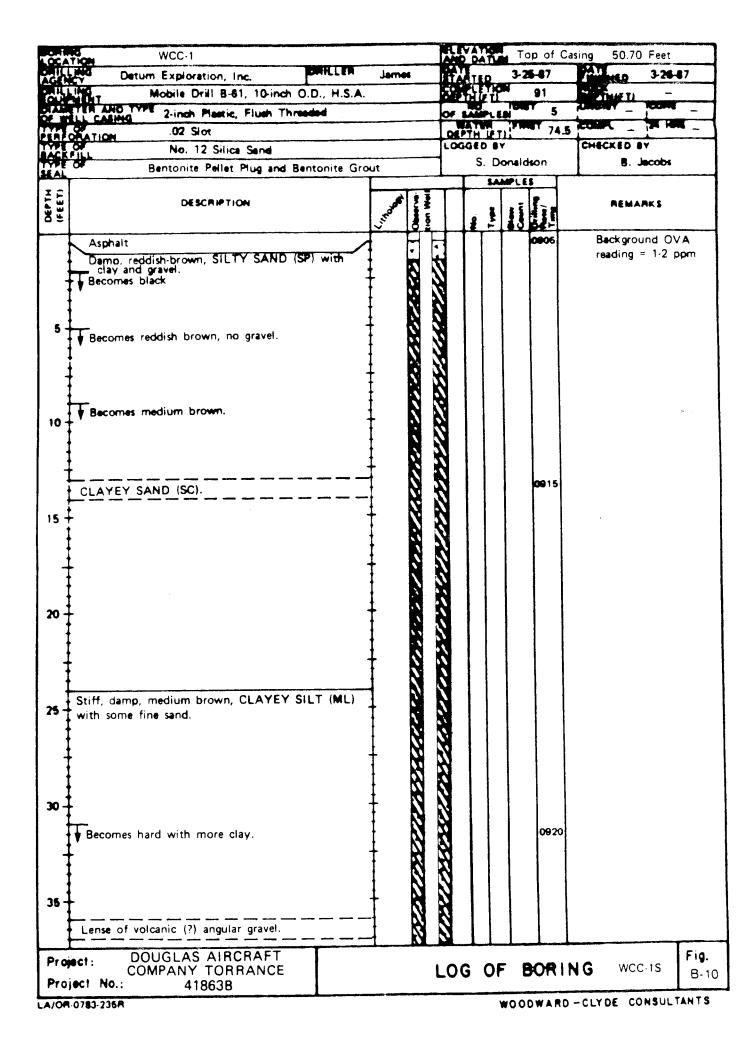


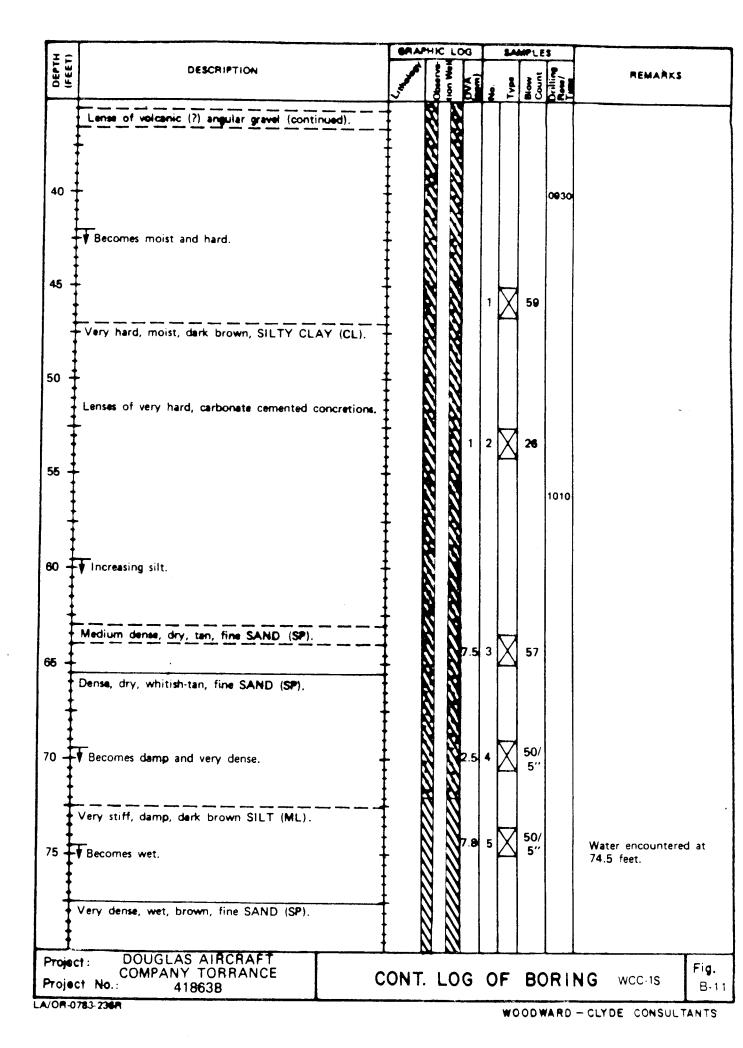


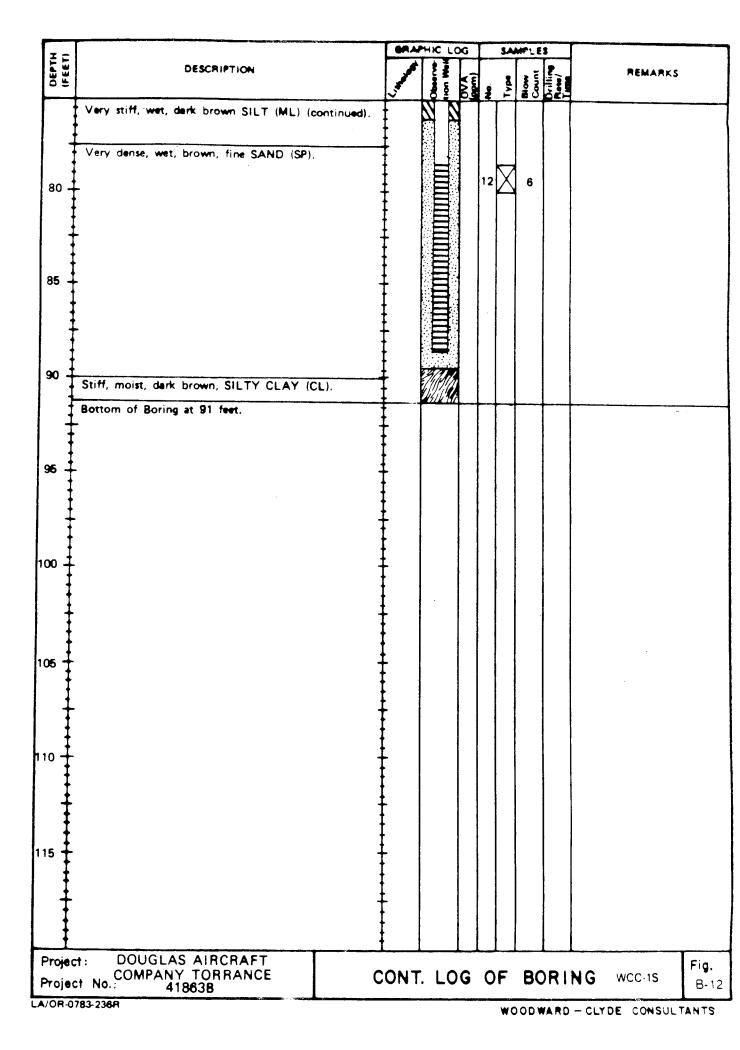
(teet)		CIC	ETION		S	SAN	ИP	LF	S	ie)		
ľH(DESCRIPTION	07					0. V.		(ppm)	ng (Tin	REMARKS	5
DEPTH(feet)		LOG	WELL COMPI LOG	No.	уре	low ount	Head-	pace	Back- Ground	Drilling Rate(Tını		- 1
- - -	very dense, moist, dark olive brown, SiLTY fine grained SAND (SM), with large calcareous nodules. 3 Lens of hard, moist, dark olive brown,	+				B	Ŧ	S	ш о		· · · · · · · · · · · · · · · · · · ·	
-01	silty clay. Silty sand becomes very moist, olive in color.	+++++++++++++++++++++++++++++++++++++++	-	9	X	39	12	5	12	0848		
-	 	+ + + + + + + + + + + + + + + + + + + +	-	10	X	29	23	50	12	0857		
- -0	Medium dense, moist, olive gray and yellowist brown mottled, SILTY fine grained SAND (SM) (SP), with Iron oxide staining, micaceous.	n +) = - - - + + + - - -		11	X	24	100	0+	12	0912		
- - 55 -	Becomes dense, medium grained with abundant iron oxide, calcareous nodules, and shell fragments cemented. Very dense, moist, yellowish brown, medium	T + + + + + + + + + + + + + + + + + + +	-	12	X	35	100	00+	12	0925	-	
0-	grained SAND (SP). Hard, moist, alive, SANDY SILT (ML),	† † † † † †		+ + 1 2		85	100)()+	12	0934		
5 -	(SILTSTONE?), micaceous. Dense, moist, yellowish brown, medium graine SAND (SP). Dense, moist, olive, SILTY fine grained SAND (SM). Bottom of Boring at 66.5 feet.	+		14	X	35	100)0+	12	0952		
- 0 - - -	+ + + + + + + +	+ + + + + + + + + + + + + + + + + + + +		* + + + + + + + + + + + + + + + + + + +								
5 - -		+++++++++++++++++++++++++++++++++++++++		+++++++								
	oject: DOUGLAS AIRCRAFT COMPANY TORRANCE oject No.: 8941863J	CON	IT. I	<u> </u>	G	0	F	E	30 R	ING	B-8 F	`ig 3-7

	TION See ESCATION MID			ELEV	DATIO	N. IUM	App	roxima	ately 5	1 Feet above MSL
DRIL AGE: DRIL	VCY A & IN Drilling, Inc.	1VI. 170	omero	DATE STAF COM			-14-		DATE	HED 6-14-83
EQU!	PMENT CALL 75 WITH STITCH O.D., H.S., OF SCREEN	A. 		DEP	TH (ft) R 01	F	5.5	ROCK DEPTI DIAME	H (ft)
TYPE	CASING PERFORATION SIZE OF -	TYPE/TH	HICKNESS (S)	BOR1				8 try mixt	WELL	(IN) Sand and Bentanite
No C	LES DIST O UNDIST 14	CORE	0	LOG	GED	BY	aesm		CHEC	KED BY
	R FIRST _ COMPL _	24 HRS	-		· .	4. !	Reyes	5	M	. Razmajoo
)EPTH(feet)		CIC	LION		SA		PLE		ne)	
E.L.	DESCRIPTION	ото) LEJ			10	D. V. A.	(ppm)	ing (Tin	REMARKS
<u>=</u>		LITHOLOGIC 1.0G	WELL COMPLETION LOG	o N	ype	Count	Head- Space	Back- Ground	Drilling Kate(Tim	
	. 5-nch Asphalt concrete over 9-inch base — material.		<u> </u>	-	<u> </u>	3	= 8	<u> </u>	<u> </u>	
: -	Medium stiff, saturated, dark brown, SiLTY CLAY (CL).	-		1	X	6	100	19	1107	
	Becomes very stiff.	-	_	-				į		
5-	· ' 	-	_	_ 2	χ 2	21	100	19	1112	
		_	_							
		-								• .
! -	Tecomes nard	-	-	-	<u>.</u>					
10		-	_	3	Δ 4	17	100	20	1120	
	<u> </u>	- -	-	-						
	Becomes more silty, very stiff.	- -	-	-						
1=	,	-	_	4	$\sqrt{2}$	26	100	20	1124	
15			_		4			20	112.	
+	Medium dense, moist, olive brown, SILTY fine grained SAND (SM).	• - -	-	-						
! -	-	- -	_	-		ŀ				:
20	_	- -	-	5	$\sqrt{3}$	30	100	20	1130	
	Stiff to very stiff, moist, olive brown, SANDY	• - -	-		_ \					
+	SILT (ML), micaceous.	- -	-	-						
+	<u>. </u>	- •	-	-						:
25	-	–	-	6	$\prod 1$	6	130	20	1137	
1 +	Very stiff, moist, dark olive brown, SILTY CLAY	- - -	-							i
+	(CL), with iron oxide spotting and root holes.	- -		-						
+	· ·	-		-				,		
30 ‡	-	-		7	$X ^2$	25	130	20	1145	
+		- -		-						
+	Medium dense, moist, olive brown, SILTY fine grained SAND (SM).	-	-	-						
25 ‡	•	-	_	8	\ \ .	21	125	20	1153	
35 +	DOUGLAS AIRCRAFT COURTY TORONICS		_		Δ.		120		1.55	
	oject: Douglas aircraft company torrance oject No.: 8941863J		LOG	C	F	E	30 R	ING		$B-9 = \frac{F_{1g}}{B-8}$
									WOODWA	RD-CLYDE CONSULTANTS





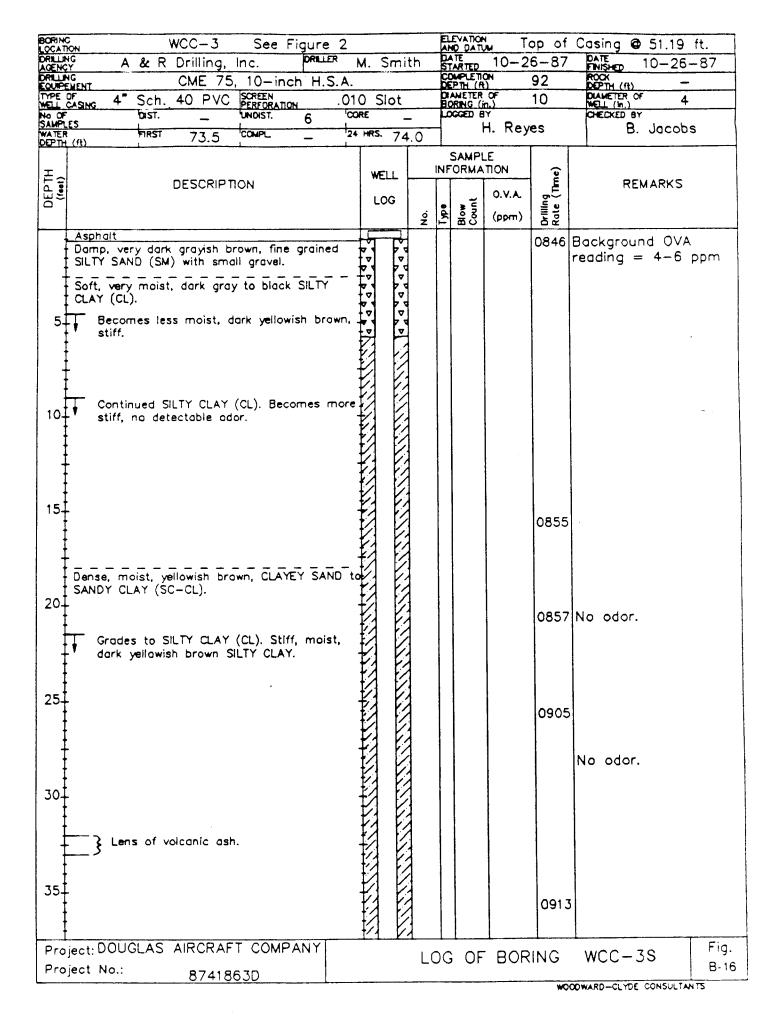




BORING LOCATION WCC-2 See Figure 2	2		ELA	VATION D DATU	M To	op of	casing @ 50.59 f	t.
DRILING A & R Drilling, Inc. DRILLER	M. Smi	th	DA	TE ARTED	10-2	8-87	PINISHED 10-28-	
DRILING CME 75, 10-inch H.S./	Α.		CO	MPLETIC PTH (A	N S	0.6	ROCK — DEPTH (ft) —	
	010 Slot		DI	WETER RING (in	OF	10	DIAMETER OF 4	
NA OF DIST. — UNDIST. 5	CORE	-	LO	COED B	Y		CHECKED BY	
MATER FIRST 73 COMPL _	24 HRS. 71	1.1	1	ŀ	l. Rey	es	B. Jacobs	i
	' 		٠,	SAMPL	F		<u> </u>	
F	WELL	ı		ORMA		•		
DESCRIPTION					0.V.A.	Drilling Rate (Time)	REMARKS	
8	LOG		•	Blow		e ⊟ (e)		
		o Z	₽dK⊥	සීරී	(ppm)	Pril		
Asphalt Medium stiff, very moist, dark yellowish brown SANDY CLAY (CL). Becomes very dark grayish brown. Color change to yellowish brown. Become stiffer less moisture, SANDY CLAY (CL).	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0					1308	Background OVA reading = 5 ppm	
Continued SANDY CLAY (CL). Less stiff, more moist.						1317		
Grades to SILTY CLAY (CL). Medium stiff, very moist, olive brown, SILTY CLAY.						1319		
25						1323		
30						1327		
35						1333		
Project: DOUGLAS AIRCRAFT COMPANY		1)G	ΩF	BOR	ING	WCC-2S	Fig.
Project No.: 8741863D			,	01	אוטנו	1110	1100 20	B-13
0.110000						WOX	OWARD-CLYDE CONSULTANTS	5

DEPTH (feet)	DESCRIPTION	WELL LOG	ó	Type	Blow	0.V.A. (ppm)	Drilling Rate (T.)	REMARKS	
40-	(continued) - Stiff, moist, clive brown, SILTY CLAY (CL).								
45	Dense, maist, olive brown, fine grained, SILTY SAND (SM), with shells.		1	X	34	5	1342		
50-	:						1357		
55-	Very dense, damp, strong brown, fine grained SAND (SP) to SILTY SAND (SM), iron oxide staining.		2	X	60	5	1402	-	
60	Becomes SILTY SAND.						1423		
65-	Dense, malst, olive, fine grained SILTY SAND (SM), some iron oxide stains.		3	X	42	6	1433		
70-							1500	∑ Water at 73	feet
75	Becomes wet. Very dense, wet, olive brown, fine grained, SILTY SAND (SM).		4	X	68	6	1512	=	
80-							1544		<u> </u>
	ject: DOUGLAS AIRCRAFT COMPANY eject No.: 8741863D	CONT	. L	OG	Of	BOF	RING	WCC-2S	Fig. B-14

DEPTH	DESCRIPTION	WELL LOG	No.	Туре	E 5	0.V.A. (ppm)	Drilling Rate (T.)	REMARKS
	(continued) Very dense, wet, olive, fine grained to very fine grained SILTY SAND (SM), micaceous, with some clay interbedding and iron oxide staining.		5	Χ;	50/ 3"	5	1600	
90	Bottom of Boring at 90.5 feet.			\vdash				
95	Bottom of Boring at 30.3 feet.	* * * * * * * * * * * * * * * * * * *						Note: 48 gallons of city water used to offset hydrostatic head of flowing sands during well installation.
100	· · · · · · · · · · · · · · · · · · ·	-						_
105		-						
110	• • • • • • • • • • • • • • • • • • •	† † †						
115		+						
120		+ + + + + + + + + + + + + + + + + + + +						
125		+						
	ject: DOUGLAS AIRCRAFT COMPANY ject No.: 8741863D	CONT	. L(ЭG	OF	BOF		WCC-2S Fig. B-1



DEPTH (fect)	DESCRIPTION	WELL.	, o	Type	Blow	0.V.A. (ppm)	Drilling Rate (T.)	REMARKS	
40-	. (continued) Stiff, moist, olive brown, SILTY CLAY (CL).						0921		
45	Lens of stiff, moist, alive, SANDY SILT (ML), micaceous with decomposed pieces- of roots.		1	X	25	30	0924	Earthy odor.	
50-	Clay becomes more stiff, interbedded with						0937		
55	lenses of dense, moist, yellowish brown, medium grained SILTY SAND (SM) with shells, partially cemented and crystalized calcite.		2	X	30	570	0945	Moderate chemic odor.	al
60							1005		
65	Dense, moist, yellowish brown to olive gray, very fine grained SILTY SAND to SAND (SM-SP), micaceous.		3	X	46	440	1015	Easier drilling. Moderate to strochemical odor.	ong
70	Very stiff, very moist, olive brown, SANDY SILT (ML), micaceous with iron oxide stains.				75	. 1000	1075	Very easy drilling.	
	Becomes wet.		4		33	1000	1035	Strong chemical odor. Water at 73.5 feet.	
75	Very dense, wet, olive brown fine grained SAND (SP) to SILTY SAND (SM).		5	X	59	+1000	1047	Strong chemical odor.	
80	Becomes medium grained.		6	X	N.R.	+1000	1112		
	ject: DOUGLAS AIRCRAFT COMPANY ject No.: 8741863D	CONT.	<u> </u> (ЭG	OF	BOR	ING	wcc-3s	Fig. B-17
	8741863D	·			· • · · · · · · · · · · · · · · · · · ·		WO	DOWARD-CLYDE CONSULTANT	

-			Т	T		_	
DESCRIPTION	LOG	, O	Туре	Blow	0.V.A. (ppm)	Drilling Rate (T.)	REMARKS
(continued) Very dense, saturated, olive brown, fine to medium grained SAND (SP-SM) with some 85-silt.						1205	Moderate to strong chemical odor.
90						1545	
Battom of Boring at 92.0 feet.	† † †						Note: Used 59 gallons of city water to offset hydrostatic head of flowing sands during well installation.
100							
105	+						
110	+						
115							
120	•						
125	+						
Project: DOUGLAS AIRCRAFT COMPANY Project No.: 8741863D	CONT.	LC	IJ)G	OF	BOR		WCC-3S Fig. B-18

BORING LOCATION					C-4			gure :	2			EJ.	VATION D DATU	u T	op of	casing © 49.69 f	t.
DRILLING AGENCY		Α	&		illing,			ORILLER		1. Sm	ith	DA ST	TE ARTED	10-2	7-87		87
DRILLING EQUIPENEN	NT.					5, 10-						DE	MPLETIC) •	91.5	ROOK — DEPTH (ft) —	
TYPE OF MELL CAS	ING	4"	Sc		PVC	SCREE PERFO	N RATION) Slot		_66	METER RING (in	<u>S</u>	10	DIAMETER OF 4	
no of Samples			DIS			UNDIS		8	COF			_\^		т Н. Rey	A C	B. Jacobs	
WATER DEPTH (ft)	8)		FIR	<u> </u>	75	COMPL	<u>-</u>		124	HRS. 7	1.6					3 . 0 0000	
DEPTH ((eet)				DE	SCRIP	ПОП				WE LL LOG		INF	SAMPL ORMA		Drilling Rate (Time)	REMARKS	
	spha										ó	Type	Blow	(ppm)	Drillin Rate		
S/	loist, AND	gro (CL).			Y CLAY				>,	٩				1230	Background OVA reading = 4-6 p No odor.	pm
30-									-								
35	_ 5	ang	jular	grav	el.	nish bl			(?)								
Projec	t: D	OU(GLA	S Al	RCRA	FT CC	MPAI	NY			1	<u> </u>		BOR	INIC	WCC-4S	Fig.
Projec					87418						L,		O٢	BUR	JING	1100-73	B-19
-					0/410	<u> </u>									wo.	ODWARD-CLYDE CONSULTANT	2

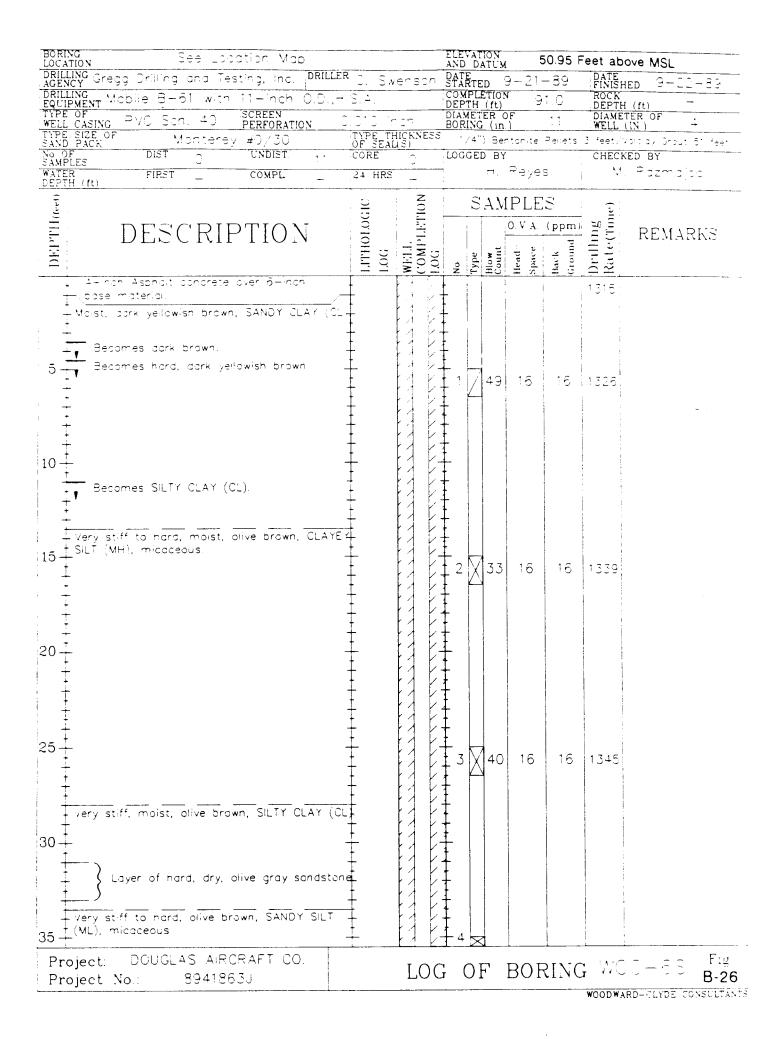
DEPTH (feet)	DESCRIPTION	WELL	ġ	1yp∙	Blow Count	0.V.A. (ppm)	Drilling Rate (T.)	REMARKS
40								
45	Very stiff, organic roots and plant detritus with orangish iron oxide staining.		1	X	18	8	1345	No odor.
50	· · · · · · · · · · · · · · · · · · ·							
55			2	X	23	8	1350	No odor.
60	Occasional fossiliferous gravel.							
65	Hard, light alive brown, fine SANDY SILT to SILTY fine SAND (SM).		3	X	43	5	1425	No odor.
70	- - - - -							
75	Becomes wet. Hard, damp, light olive brown, SILTY CLAY (CL) with iron oxide staining.		4	X	42	7		∑ Water at 75 feet.
	Very dense, light olive brown, fine grained SAND (SP) with little silt. 3 2 inch layer of CLAY (CL).		5	X	45	8	1530	No odor.
	ject: DOUGLAS AIRCRAFT COMPANY	CONT	. L	OG	OF	BOF	RING	WCC-4S Fig. B-20
Pro	ject No.: 8741863D						w	DODWARD-CLYDE CONSULTANTS

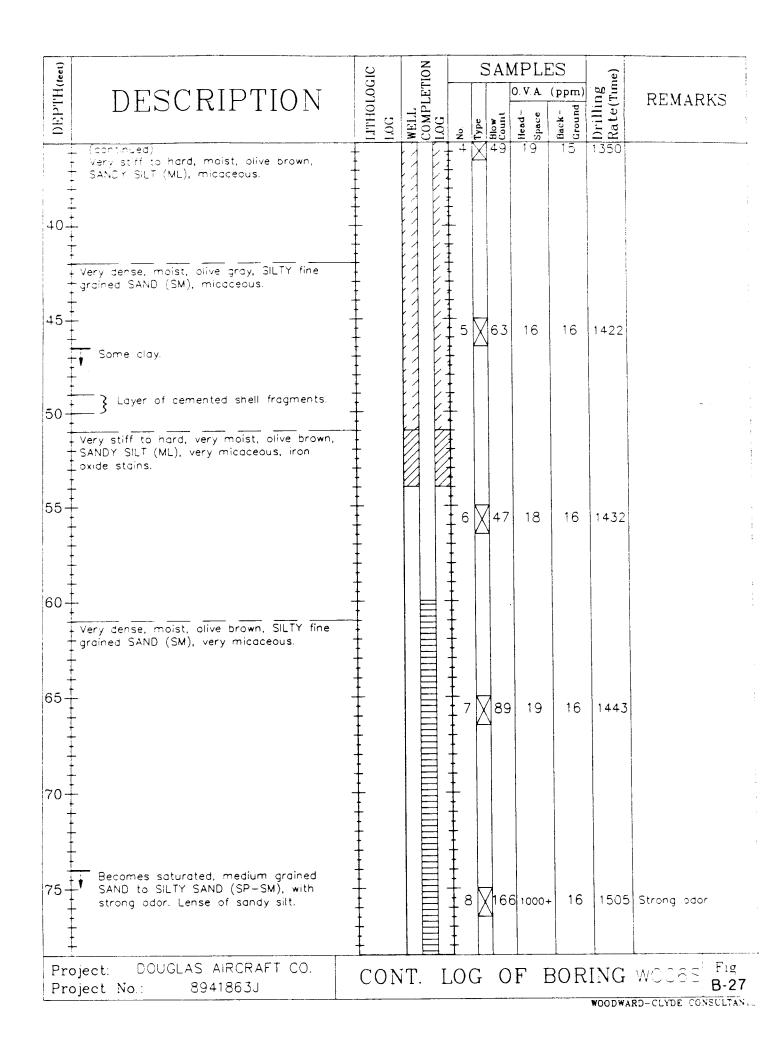
DEPTH (Next)	DESCRIPTION	WELL	óż	Type	Blow	0.V.A. (ppm)	Drilling Rate (T.)	REMARKŚ
85-	(continued) Very dense, wet, light olive brown, fine grained SAND (SP) with little silt.							
90	Moist, light olive brown, SILTY CLAY (ML-CL).		6	X	N.R.	8	1700	
95	Battam of Boring at 91.5 feet.	+						Note: 45 gallons of city water used to offset hydro static head of flowing sands during well instal—lation.
100-		+						
105		+						
110-		† † †						
115-		 						
120-		+						
125-		+		į				
	oject: DOUGLAS AIRCRAFT COMPANY oject No.: 8741863D	CON	T. L	.00	G O	F BO		WCC-4S Fig. B-2:

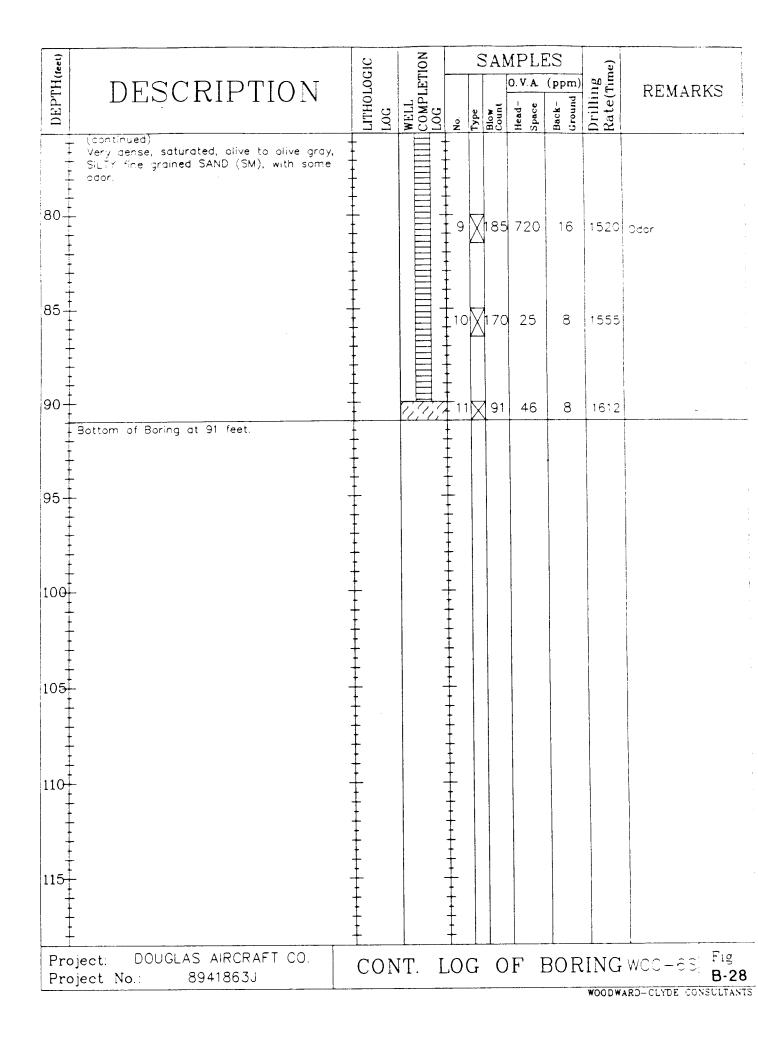
A & R Drilling, inc. CME 75, 10 - inch H.S.A. BENEFIT 11-24-87	ORING	ON			WCC-5			···			EL	EVATION D DAT	i M	48.2	22 Feet above MSL
TO SECULD TO SEC	RILLIN	G Y	Α	& F	Prilling	, inc.	DRILLE	R	TEXT	-	PA	TE ARTED			
St. Sug 4" PVC, SCH, 40 SERTION Lone Star #0130 PWCF 97 10 SERTION - 1	MILLIN	G MENT					inch H	S.A			Č	MPLETIC			ROOK -
DESCRIPTION REMARKS REMARKS REMARKS REMARKS DESCRIPTION REMARKS REMARKS DESCRIPTION REMARKS REMARKS DESCRIPTION REMARKS DESCRIPTION REMARKS DESCRIPTION REMARKS DESCRIPTION REMARKS DESCRIPTION REMARKS REMARKS DESCRIPTION REMARKS REMARKS DESCRIPTION REMARKS DESCRIPTION REMARKS DESCRIPTION REMARKS DESCRIPTION REMARKS REMARKS DESCRIPTION REMARKS DESCRIPTION REMARKS DESCRIPTION REMARKS DESCRIPTION REMARKS REMARKS DESCRIPTION REMARKS DESCRIPTION REMARKS REMARKS DESCRIPTION REMARKS REMARKS DESCRIPTION REMARKS DESCRIPTION REMARKS DESCRIPTION REMARKS DESCRIPTION REMARKS REMARKS DESCRIPTION REMARKS REMARKS DESCRIPTION REMARKS DESCRIPTION REMARKS DESCRIPTION REMARKS DESCRIPTION REMARKS REMARKS DESCRIPTION REMARKS DESCRIPTION REMARKS REMARKS DESCRIPTION REMARKS REMARKS DESCRIPTION REMARKS DESCRIPTION REMARKS R	PE C	F	4"	PVC.						130	p/	METER	OF .		DIAMETER OF A
DESCRIPTION MELL NOTORMATION WELL NOTORMATION WITH little sand. Moist, dark olive brown, CLAYEY SILT (CL-ML) With little sand. Moist, moderate brown, SILTY CLAY (CL), With some sand. Becomes more Silty. B Jacobs H. Reyes REMARKS REMARKS REMARKS Background OVA reading = 3-4 ppm Project: DOUGLAS AIRCRAFT COMPANY LOG OF BORING WCC-5S Fig. 100 DESCRIPTION REMARKS Fig. 20 REMARKS	o OF					UNDIST.					뱹	CCED 8	7.) Y	, , , , , , , , , , , , , , , , , , , 	CHECKED BY
DESCRIPTION REMARKS REMARKS 1400 Beckground OVA reading = 3-4 ppm DESCRIPTION DESCRIPTION DESCRIPTION DESCRIPTION DESCRIPTION DESCRIPTION REMARKS 1400 Beckground OVA reading = 3-4 ppm DESCRIPTION DE	ATER PIH	(ft)		FIRST	73			24	HRS.70.3	3 1/2	2			bs	
Moist, dark olive brown, CLAYEY SILT (CL-ML) with little sand. Moist, moderate brown, SILTY CLAY (CL), with some sand. Becomes more Silty. Becomes dark yellowish brown. Becomes dark yellowish brown. Becomes dark yellowish brown.														<u> </u>	
Moist, moderate brown, SILTY CLAY (CL), Moist, moderate brown, SILTY CLAY (CL), With some sand. Becomes more Silty. Becomes dark yellowish brown. 15. Becomes dark yellowish brown.	(100) (100)				DESCRIP	ΝΟΠ΄							0.V.A.	rilling ate (Tim	REMARKS
	15	Moist, with s	 mo some	derate sanc	ore Silty.		. (CL). —								reading = 3-4 ppm
) roje	oct DC	วบด	LAS	AIRCRAF	T COMP	ANY			Ll	Ц			<u> </u>	WCC 59 Fig
Project No.: 8741863D	-			_, ,0						LO	G	OF	BORI	NG	WCC-5S

DEP TH	DESCRIPTION	WELL		•	» ξ	0.V.A.	Drilling Rate (T.)	REMARKS
40	Moist, dark yellowish brown, SILTY CLAY (CL). (continued)	28	N O N	Type	Blow	(ppm)	1445	
45	Dense, moist, dusky yellow to light olive brown, fine grained, SAND (SP) with little silt.		1	X	34	3		No odor.
55-	Interbeds of Silty Sands and Clay.		2	X	37	5	1515	No odor.
60								
65	Becomes very dense.		3	X	70	4	1550	No odor.
75 5	Becomes wet. Dense, wet, moderate olive brown, fine graine. SILTY SAND (SM-ML).	1	4		35	3		∑ Water at 73 feet. No odor.
	et:DOUGLAS AIRCRAFT COMPANY	CONT. I	_0(-l- G	OF I	BORIN	1G	WCC-5S Fig. B-23/24

DEPTH (Fet)	DESCRIPTION	WELL	ó	Type	Count	0.V.A. (ррт)	Drilling Rate (T.)	REMARKS
85	Dense, wet, moderate olive brown, fine g SILTY SAND (SM-ML).	rained						No
90								No sample collected Augers sanding—in.
95	Bottom of Boring at 91 feet.							Note: 55 gallons of city water was used to aid well install—ation.
		† † †						
100		† † †						- .
05		† † †				-		
10-								
15		† †						
20		† † † †						
25		† † †						
	ct: DOUGLAS AIRCRAFT COMPANY ct No.: 8741863D	CONT.	LOC	01	F B	ORIN	IG	WCC-5S Fig. B-25





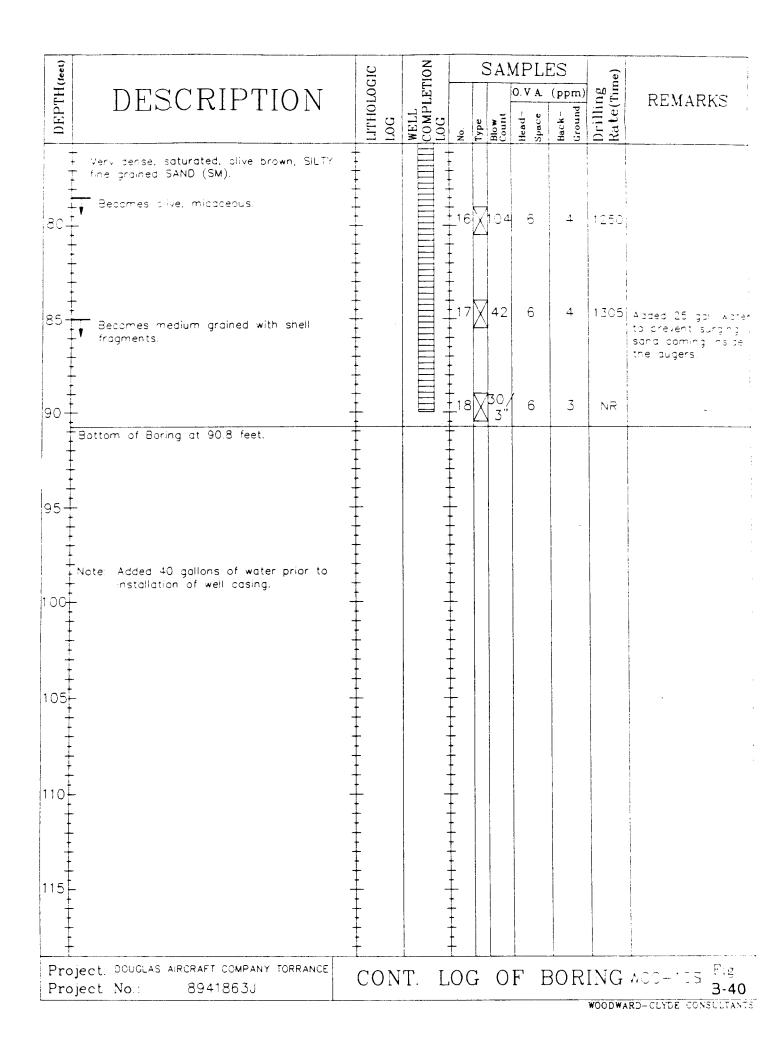


BORI	ATION See Local II. Map		·····		ELE	VATIO DA	ON TUM		48	3.29 f	eet MSL
DRIL	LING A & R Driling, Inc. DRIL	LER	M. Ro	omero	DAT			6-8-	-89	DATE	HED 6-8-89
DRIL EQUI	LING CME 75 with 10-inch O.D.,H					TH (9	0.5	ROCK DEPTH	
TYPE	LOSING PVU SCH. 40 PERFORATION		01 — in		DIAN BOR	IETE ING	R C (in)F)	10	DIAME	TER OF 4
TYPE	E/SIZE OF Lonestar No. 0/30	TO	YPE/THE	HICKNESS L(S)					ts 5 f		lay grout 49.0 ft.
No O	PLES DIST. 1 UNDIST. O	- 1	ORE	0	LOG	GED		laesm	an		KED BY
WATE	FIRST _ COMPL _	2	4 HRS					Reyes		IVI	. Razmajoo
eet)			IC	WELL COMPLETION LOG		SA	٩M	PLE	S	(e)	
DEPTH(feet)	DESCRIPTION		LITHOLOGIC LOG	FE		Π		O. V. A.	(ppm)	ıg Fim	REMARKS
.P.1	DESCRIPTION		H H	11 d 17			ير _		-J	Le (CAMENIA
DE			LIT		Ö	Type	Blow	Head-	Back- Ground	Drilling Rate(Time	
	6-inch Asphalt concrete, over 8-inch ba material.	se									
	Hard, moist, black, SANDY CLAY (CL). Becomes dark yellowish brown.			121 12	1	M.	31	1	10	0913	
	Becomes dark yellowish brown." /	+			-						
		+		141 14	<u> </u>	\forall		4			
5-		-			2	M'	45	1	10	0940	
	<u> </u>	+		121 12	+						~
	•	+			-						
	+	+		141 [6	+						
10	<u> </u>	Ī			3	M	36	. 1	10	0951	
10		Ŧ		1/1 1/2		H					
+	Medim dense, moist, olive brown, SILTY fingrained SAND (SM).	e		121 [2	+						
		‡			+	\square					
15		+	•	1/1 1/2	4	X	14	3	10	1002	
	•	Ŧ			F						
		+		121 12	+						
	Becomes dark yellowish brown, with trac	ce 🕇			+						
	of clay, some decomposed roots.	+			5	M	25	2	10	1009	
20-		+	•		+	M.		_			
		Ī			E						
		\perp			Į						
1 1	Hard, moist, dark olive brown, fine grained SANDY CLAY (CL), with root holes.	‡			‡						:
25	5,44,67 (6 2), 4. 41, 1000 1.0100.	‡		13 3	<u>†</u> 6	X	31	2	10	1017	
		‡			‡	П			ļ		
	Dense, moist, olive brown, SILTY fine grain	ed		131 13	Ŧ						
I	SAND (SM).	Ŧ			<u> </u>						
		+		121 12	+ 7	М	41	2	10	1058	
30	_	+	-		†′	М	71			1030	
‡		†		13 12	†						
†		Ī			Ī						
]		Ī			ŧ						
35	With root holes and small nodules of calcium carbonate (HCL Reaction).	‡	-		‡8	M	32	2	10	1105	1
	Oject: Douglas AIRCRAFT COMPANY TORRANCE			144.44	l	<u>K_X</u>		L			
1	oject No.: 8941863J			LOC	; (ЭF	ָ	BOF	SINC	; WC	CS F19 B-29
	-,										<u> </u>

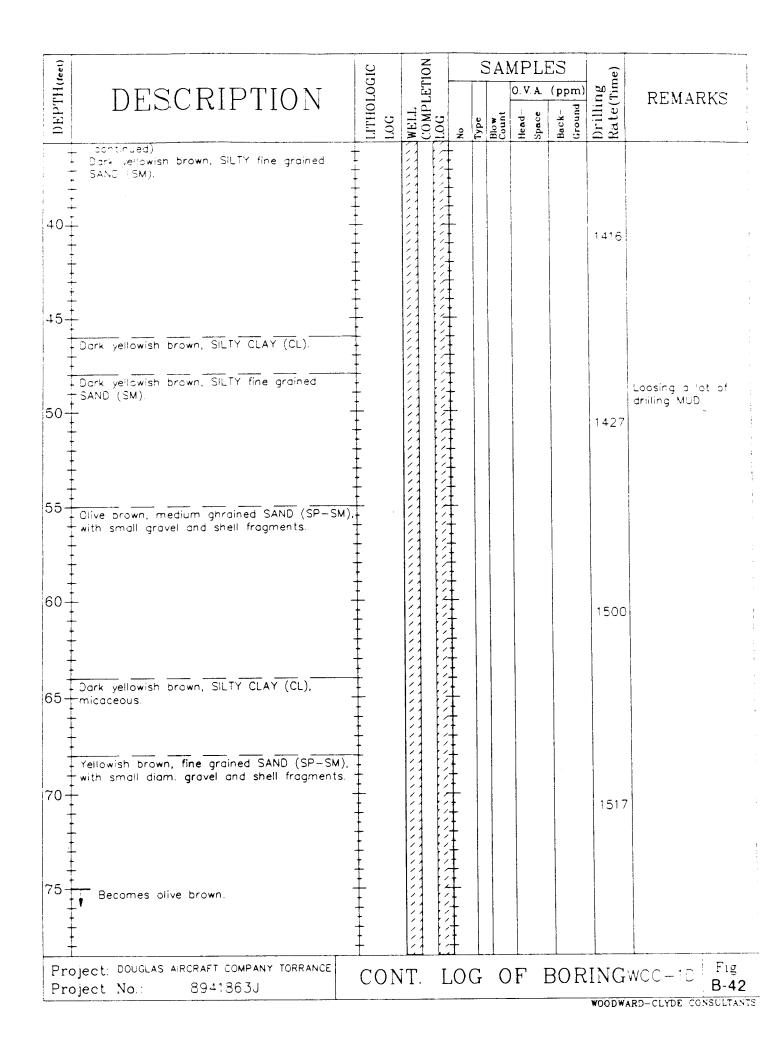
feet)		310		ETION			SAN	MPLI	ES	(e)	
ľΉ	DESCRIPTION) 						O. V. A.	(ppm)	ng Tim	REMARKS
DEPTH(feet)		LITHOLOGIC LOG	WELL	COMPI LOG	No	Type	Blow Count	Head- Space	Back- Ground	Drilling Rate(Time)	
	Dense, moist, plive brown, SILTY fine grained SAND (SM), with root holes and CaCo, nodules		7777		 						
40	Medium dense, moist, dark brown to alive brown, medium grained SAND (SP).	-	//////////	(1) (1) (1)	9	X	25	3	10	1112	
45-	Dense, moist, olive brown, fine grained SAND to SILTY SAND (SP—SM).	- + + + +		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	1(44	2	12	1123	
+	Zone of hard, damp, light brown, calcareous material (sand and shell fragments)				1	1 🗴	19	3	10	1134	
50-	very stiff, moist, olive, CLAY (CL), mixed with shell fragments and calcareous nodules (appears to be gouge zone). Dense, moist, olive, SILTY fine grained SAND	+			+)			
55	(SM). Hard, moist, olive, SANDY CLAY (CL), with some iron oxide staining.	+ + + + + +		4 -	4 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	2	35	2	10	1148	
60-	Dense, moist, olive brown, SILTY fine grained - SAND to SAND (SM-SP).	+ + + + + + + + + + + + + + + + + + + +			† † † † † † † † † † † † † † † † † † †	3	38	1	10	1201	
65	(SF). - - - - -	† † † † † †	•		+++++++++++++++++++++++++++++++++++++++	4	43	1	10	1214	
70	Dense, very moist, olive, SILTY fine grained - SAND (SM), micaceous.				T + + 1 + 1 + + + + + + + + + + + + + +	5	44	3	10	1228	
75	Becomes saturated.	+ + + + + + + + +			+ + + + + + + + + + + + + + + + + + + +	6	44	9	10	1300	
1	oject: Douglas Aircraft company torrance oject No.: 8941863J	‡ CON	1T 	<u></u> '. I	<u>+</u> 	<u> </u>	0	F F	⊥ 30R		WCC-75 Fig. B-30 RD-CLYDE CONSULTANTS

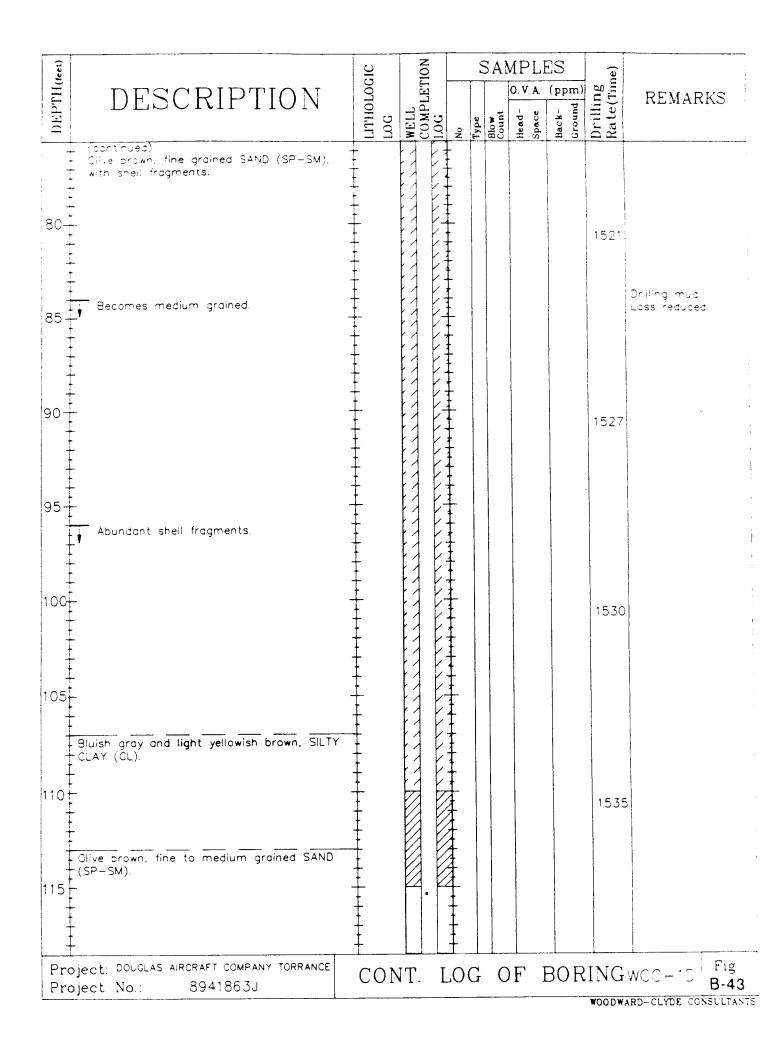
	- 1			15+	+++	+ †…	+ - 	110		+ † 1	···• +	105		++-	++ +	+-	+++	· + + †	t augers.	sublibb Suramps So aban		(L) (I) (I) (I) (I) (I) (I) (I) (I) (I) (I		85	7 € (41 € (3 0))	' ' -	(/) () ()	() () () () () () () () () () () () () (DEPT	H (see	el)
8941863J	DOUGLAS AIRCRAFT TORRANCE COMPANY																		sand saming inside the	etion of drilling laca approximate ap water to pre	3.1	a, more sit, no shell fragments.			ents.			3	saturated, blive, SILTY the grained SM , micaceous	EUCKIT ION	\vec{J}	
CONT.		++-+-	-++	++	+++	+-+-	+-++	++	+ +-+	++-	- -	++-	+ + +		+++	-+-+-+	+ + +	+ + + -	 • • •	++++	-+ + +		· • · - · • · ·	······ ··· · · ·		++++	+++	•- + • +·		LITHOL LOG	OGI(c
1. LOG	- -		+ + +	++	++	+ +	+-+-+	++	+-+-+	-+-+-	+ + +	++	 + -	+ + +	+++	 • •	+++	++-	 • • •	+-+ + + +	· '					-+-+ +-+		.	•	WELL COMPL LOG	ETIC)N
)																					X.]		0,4)		 (n (n 			licad	V 0	SAMP
BOR																											a,			Back- Ground	(maga)	SE
WOODWARD-CLISE	· ·		· · ·															(O) +:			- }	f. in		()			. (7) (7) (7) (7) (7) (7) (7) (7) (7) (7)		0 da	Drillin Rate(T REMARKO	ime)
, ψ	**: f :																				1							3 1 3	1 () 1 ()	д У]	

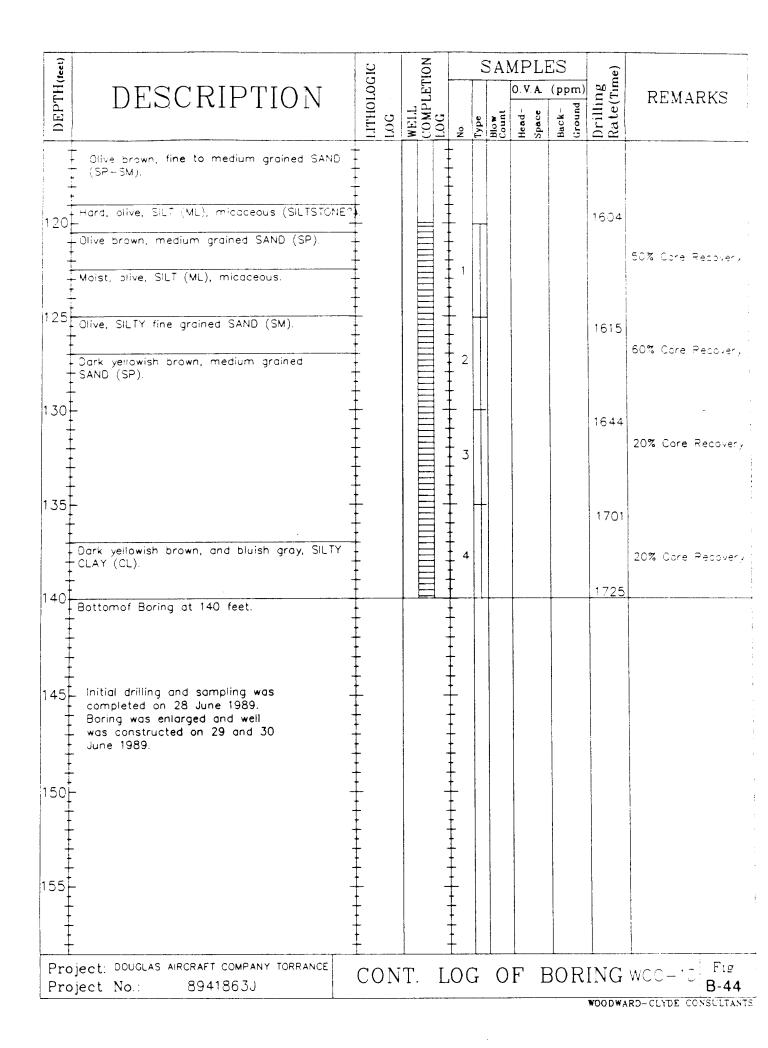
ORIN OCAT RILL	MON See Eseation was	M Ro	mero	ANI		TUM	5-12-		DATE FINISH	eet MSL ED 6-12-89
EN RILL	ING CME 75 with 8 and 10-inch 00		iliiei O	COL	MPLE	TION).O	ROCK	
UIF PE	OF SCREEN			DIA		ER O	F	<u> 10</u>	DEPTH	TER OF .
LL	CASING SCH. 40 PVC PERFORATION U). () 1 — in Itype/th				(in.			WELL	(IN.) 4 ay grout 49.5 ft.
ND		TYPE/TH OF SEAL CORE	(S)	TOO		BY		، د د):		ED BY
AMP	LES	24 HRS.		-		. GI	aesm			. Razmajao
EPTI	H (ft)	~ T 111-		-			Reyes			
(eet)	ļ.	25	LETION		S		PLE	,)e)	
Ξ	DESCRIPTION	JTHOLOGIC JOG	ET				0. V A.	Back - Ground Mdd	ng Tin	REMARKS
DEPTH(feet)	DESCRIPTION 1	유	HE 7			اير	- q	k- und	te (TIE MITTING
<u> </u>		1111	WELL COMPI	No.	Type	Blow	Hea	Bacl	Dr. Ra	
+	8- nch Asphalt concrete.	+	AF	I					0750	
+	Base material, medium dense, moist, yellowism	-	[3] [3	Ŧ 1	\square	12	0	11	0800	
+	granite.	Ŧ		Ī	$ \mathcal{C} $	-				
+	Stiff, very moist, very dark gray, SANDY	Ī	[2] [2	I						
_ +	-CLAY (CL). Hard, moist, dark yellowish brown, SANDY	+		1 2	2 M	55	13	11	0810	
5+	CLAY to CLAYEY fine grained SAND (CL-	1		1						
†	- SC).	_	[2] [2	‡					İ	<u>~</u>
Ŧ		‡		‡						
I	Hard, moist, olive brown, SILTY CLAY (CL).	‡		‡						
0		‡		# 3	3 🛚	82	30	11	0819	
Ĭ	<u>.</u>	‡	[3] [3	#						
\overline{f}		‡		#						
I	Medium dense, moist, olive brown, SILTY fine grained SAND (SM).	‡	14 1	#						
\overline{I}	- granieu Sand (SM). -	‡	E1 E	#	L.					
5 		‡	131 E	4	4 X	20	41	11	0823	
·		‡		4						
‡	CO TV	‡		7						
‡	Very stiff to hard, moist, olive brown, SILTY -CLAY (CL), with CaCo, veinlets.	‡		7						
‡	- · · · · · · · · · · · · · · · · · · ·	+	/1 :	7.	_	1			00	
0	_	‡	[2]	4	5 X	26	46	11	0830	
‡	<u>.</u>	‡	[3]	汗						
‡	<u>.</u>	‡		4						
‡	-	‡	1/1	7						
‡	-	‡	131	7		1			0.0.5	
25 +	Dense, moist, oli ve , SILTY fine grained	+	[3]	子	6 X	33	24	11	0839	
‡	SAND (SM—ML), with some iron oxide staining and hairlike root holes.	4		汗						
‡	- und numbre root noies.	‡	121	4						
+	-Hard, moist, dark olive brown, SANDY CLAY	7	[3]	注						
‡	(CL), with caliche veinlets.	+	13	汗.	, k	1		1 1 1	0010	
io ‡	·	+	1/1	升	/ <u>[X</u>	32	21	11	0846	
+	· -	\pm	[1]	\mathcal{F}						
†	Dense, moist, olive brown, fine grained SAND	+	123 1	1						
‡	to SILTY SAND (SP-SM).	<u></u>	1/1	壮						
+	-	<u> </u>	131 1	狂	. k	7.1	17	10	0055	
35 -	I Becomes more silty, grades to (SM)			1	8 /	31	43	10	0855	'
D =	oject: DOUGLAS AIRCRAFT COMPANY TORRANCE	-			_				~ \N/C	00-88 F i



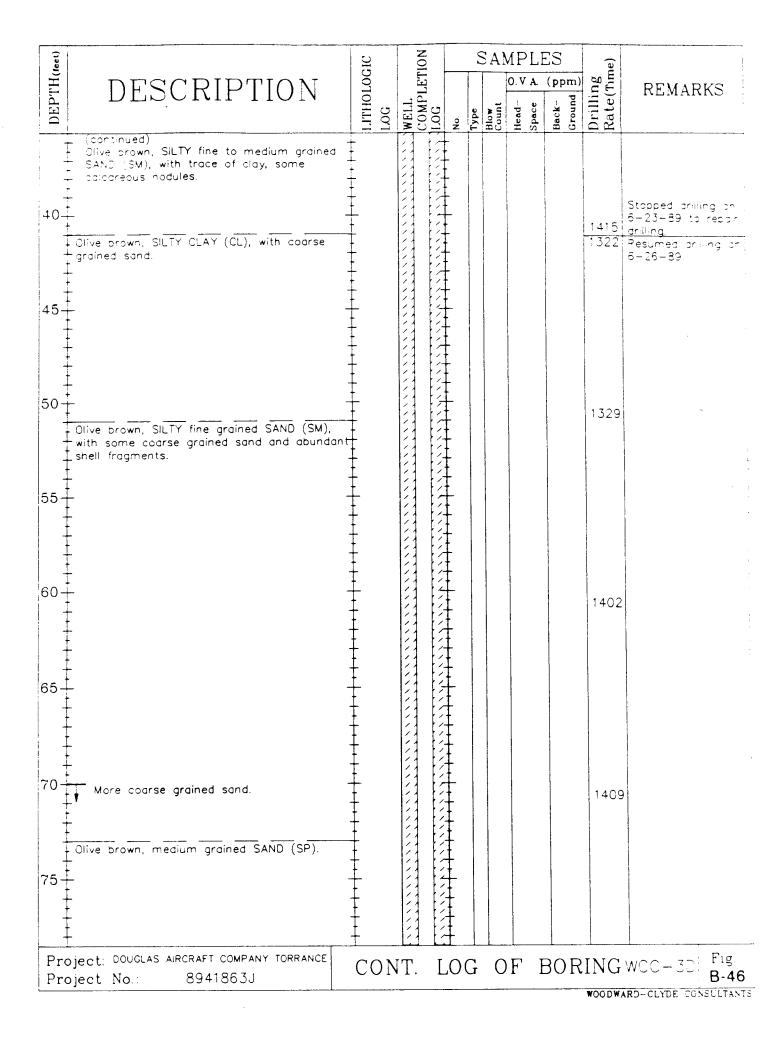
BORING LOCATION		Location M					VATIO! DATU	J M	50		eet MSL	
DRILLING AGENCY	Beylik Drilling		DRILLER	D. J.	ones	STA	E RTED IPLETI	6-28		DATE FINISI ROCK	_{HED} 6-30	-89
DRILLING EQUIPMENT TYPE OF	5.40.6.1.4	Rand, MUD	,	2 04 :		DEP	TH (f	OF	40	DEPTH	{ (ft.)	
TYPE/SIZE	OF Land	O SCREEN PERFORA tar No. 0/3		TYPE/THOF SEAL	<u>ijckness</u>	BOR	RING (in.)	10 ets 5		TER OF (IN)	1 27 ft
SAND PACE No OF SAMPLES	DIST. 4	TIMBIOT		CORE	0	roc	GED I	3Y		CHECK	KED BY	
WATER DEPTH (ft)	FIRST	COMPL		24 HRS.				. Reye Glaesm		М	. Razmajo	00
1				21	NO		SA	MPLE	S	e)		
H	DESCI	SIPTIO	N	507	LETION			0. V. A.	(ppm)	ng Tum	REMAR	RKS
DEPTH (reet)	DESCI		. T A	LITHOLOGIC LOG	WELL COMP LOG		Type Blow	Count Head- Space	Back- Ground	Drilling Rate(Time)		
! -	inch Asphait cond	rete over 6-	nch base	33	₹ 33	N N	Tyl	S = Co	Ba C.			
1 + ma	iterial.			<u> </u>		7				1235		
+ SAN	yellowish prown, D (SC), with smal	1 diameter gro	grainea ivel:	<u>+</u>		<u>†</u>						
‡						1						
5 +			-	<u>†</u>		+				1707		•
+				+		+				1303		1
<u> </u>				Ī		Ī						i !
+		CUTY CLAY (21.)	+		:						
10 + Dark	yellowish brown, grained sand.	SILIT CLAT (JL), WITH -	 		+						
+				+		7				,		
<u> </u>				<u> </u>		7						
+				+		4		1				
15 🕂				†		7				1308		
+				+		#				1300		
<u> </u>				Ī		1						
Ī				 		4						
20 +			-	+		4						
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Ī			•	Ţ		\mathcal{I}					Stopped	
25 +				+		4				. 7 7	to repair	drill
‡				‡		<i>[</i>]	l			1313	Resumed	1 drilles
+				<u>†</u>		<u> </u>				1 700		9. 11 3.
1				Ī		狂						
30 ‡				+		4						
†				<u> </u>		7						
+				†		往						
Dark (SM)	yellowish brown,	SILTY fine gro	ained SAN	<u> </u>								
35 +				+		4						
Projec	t: DOUGLAS AIRCRA	FT COMPANY TO	RRANCE		100	~	ΛE	DO1	DINIC	~ W(DO-10	Fig
Projec	t No.: 88	40863J			TO(J	10	B01			ARD-CLYDE C	B-41

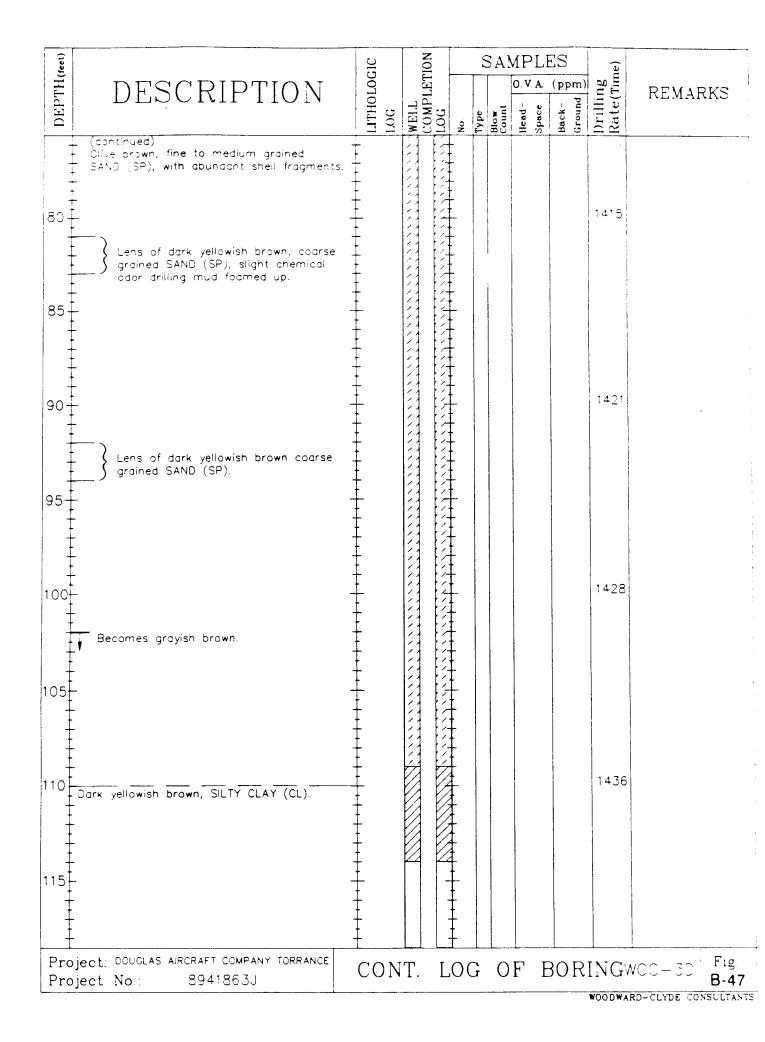


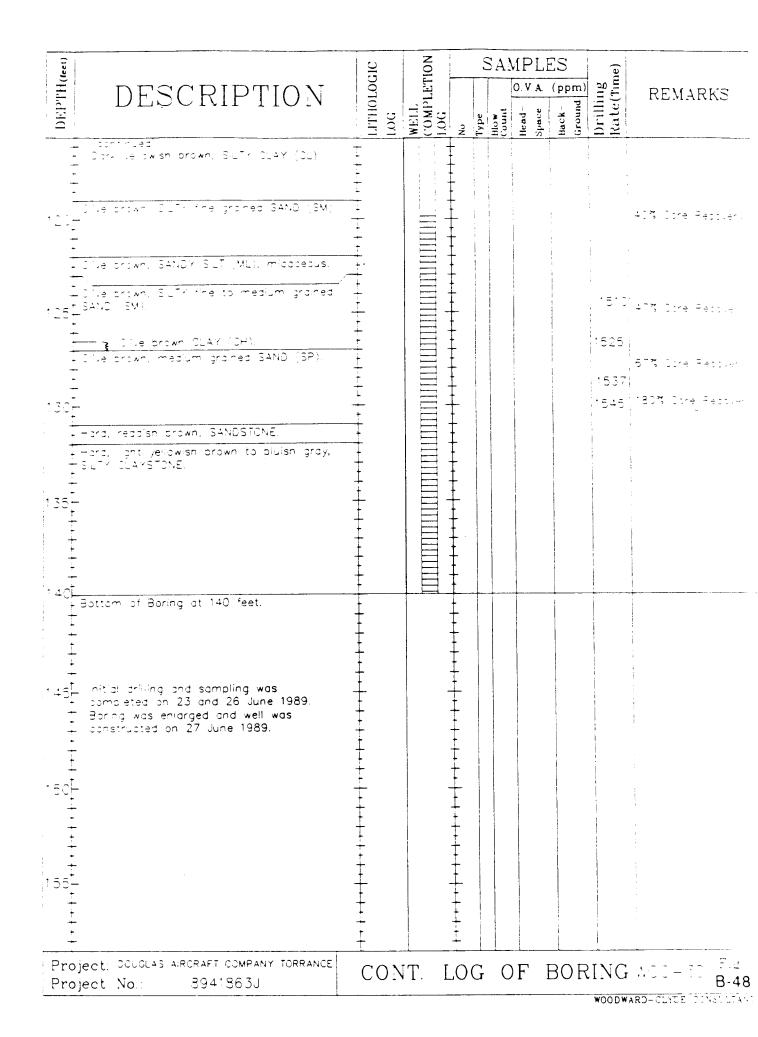




BORIN LOCA DRILL	TION	See Loc Drilling, Inc	ation Map	DRILLER					ATION DATU				eet MSL	
DRILL	CY OCYTIC	ngersal Ran			· U	lone		DATE STAR COMP DEPT	LETIO	6-23 N 1	-89 40	DATE FINISH ROCK DEPTH		- 89
TYPE	OF CASING PVC	Sch. 40	SCREEN PERFORATIO	у (0.01 ir				H (ft) ETER NG (in		10	DIAME	TER OF	4
SAND No OI	SIZE OF PACK F	Lonestar DIST: 4	# 0/30 [UNDIST.		TYPE/T OF SEA CORE		ESS		enton ED B		lets 5		lay grout 1 CED BY	06 ft.
WATER DEPTH	LES R F	TIRST	COMPL	<u> </u>	24 HRS	0			Η.	Reye Ilaesm			. Pazmaj	:
	(1 (10)		i		2	2	2 0			1PLE		(e)		
	DF	SCRIE	PTION	-	1.0G	1 100	LE			O. V. A.	(ppm)	ng Tim	REMAI	RKS
DEPTH(feet)					LITHOLOGIC LOG	WELL.	0G	Ö	Type Blow Count	Head - Space	Back- Ground	Drilling Rate(Tim		
		hait concrete	cover.			≥ €	ا کا	Ž (<u> </u>	H S	മ്	1326		
	<u>6-inch Bas</u> Dark yellowish SAND (SM).	n brown, SILT)	fine grained	i i	+	\\ \rangle \rangle \\ \rangle \\ \rangle \\ \rangle \\ \rangle \\ \rangle \\	\[\frac{\partial}{\partial}\]	-						
+	-				<u> </u>	77	7	-						
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+					<u> </u>			-						:
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+					‡							1747		:
10 +	With some	e clay.		-	<u> </u>			-				1347		
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+		oliv <mark>e brown</mark> , fi ned SAND (SN		m ·	‡									!
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30 🕂	-			-	+		1/					1358		:
+	Becomes of nodules.	clayey with so	ime calcareo	us .	-		(//							
‡					‡									
35 +	-			-	+		1							
	ject: DOUGLA	S AIRCRAFT COI	MPANY TORRAI	4CE	1	T/		<u> </u>	 \ T:'	DOI		· \//	^_ <u>₹</u> ^	Fig
Pro	oject No.:	894136	53J				OG —	· (γГ	100	7111/		O-30 RD-CLYDE C	B-45







APPENDIX C ANALYTICAL RESULTS

June 28, 1989

WOODWARD-CLYDE CONSULTANTS 203 N. Golden Circle Drive Santa Ana, CA 92705

Attn:

Dr. Alistaire Callender

JOB NO.

12944



UND TRANSIS

LABORATORY REPORT

Samples Received: Fifty-five (55) soils

Date Received: 6-13-89

Date Released for Analysis: 6-20-89

Purchase Order No: Proj#: 8941863J-Task 1/Douglas Aircraft Co.

The samples were analyzed as follows:

Samples Analyzed

Analysis

Results

Thirteen (13) soils

Halogenated and Aromatic

Volatile Organics by EPA 8010/8020

Data Sheets

Page 1 of 1

Shelley Stuart

Senior Chemist

D.J. Northington, Ph.D. Technical Director

9840 Alburtis Avenue • Santa Fe Springs, California 90670 • 213/948-2225

Client: WOODWARD-CLYDE CONSULTANTS

Job No: 12944

Date Matrix: Soil

Analyzed: 25-Jun-89 Samp Amt: 1 gm Analysis: EPA 601/602 (8010/8020) Dil Fact: 1

Sample: B-6-3-3 /

Compound	Concentration mg/Kg	Detection Limits
Chloromethane	ND	0.005
Bromomethane	ND	0.005
Vinyl Chloride	ND	0.003
Chloroethane	ND	0.005
Methylene Chloride	0.053	0.025
1,1-Dichloroethylene	ND	0.003
1,1-Dichloroethane	0.011	0.002
trans-1,2-Dichloroethylene	ND '	0.002
Trichlorofluoromethane	ND	0.002
Chloroform	ND	0.002
1,2-Dichloroethane	ND	0.002
1,1,1-Trichloroethane	0.016	0.002
Carbon Tetrachloride	ND	0.002
Bromodichloromethane	ND	0.002
1,1,2,2-Tetrachloroethane	ND	0.002
1,2-Dichloropropane	ND	0.002
trans-1,3-Dichloropropylene	ND	0.002
Trichloroethylene	ND	0.002
Dibromochloromethane	ND	0.002
1,1,2-Trichloroethane	ND	0.002
Benzene	ND	0.001
cis-1,3-Dichloropropylene	ND	0.002
2-Chloroethyl Vinyl Ether	ND	0.004
Bromoform	ND	0.003
Tetrachloroethylene	ND	0.002
Toluene	0.064	0.001
Chlorobenzene	ND	0.004
Ethylbenzene Total Yulong	0.001	0.001
Total Xylenes	0.009	0.001
1,3-Dichlorobenzene	ND	0.001
1,4-Dichlorobenzene	ND	0.001
1,2-Dichlorobenzene	ND	0.001

Client: WOODWARD-CLYDE CONSULTANTS Sample: B-6-5-3

Job No: 12944

Date Matrix: Soil

Analyzed: 23-Jun-89 Samp Amt: 1 gm Analysis: EPA 601/602 (8010/8020) Dil Fact: 500

Compound	Concentration mg/Kg	Detection Limits
Chloromethane	ND	2.5
Bromomethane	ND	2.5
Vinyl Chloride	ND	1.5
Chloroethane	ND	2.5
Methylene Chloride	ND	13
1,1-Dichloroethylene	ND	1.5
1,1-Dichloroethane	ND	1
trans-1,2-Dichloroethylene	ND	0.8
Trichlorofluoromethane	ND	1
Chloroform	ND	0.8
1,2-Dichloroethane	ND	1
1,1,1-Trichloroethane	12	0.8
Carbon Tetrachloride	ND	0.8
Bromodichloromethane	ND	0.8
1,1,2,2-Tetrachloroethane	ND	0.8
1,2-Dichloropropane	ND	0.8
trans-1,3-Dichloropropylene	ND	0.8
Trichloroethylene	45	0.8
Dibromochloromethane	ND	0.8
1,1,2-Trichloroethane	ND	0.8
Benzene	ND	0.5
cis-1,3-Dichloropropylene	ND	0.8
2-Chloroethyl Vinyl Ether	ND	2
Bromoform	ND	1.3
Tetrachloroethylene	ND	0.8
Toluene	1900	0.5
Chlorobenzene	ND	1.6
Ethylbenzene	51	0.5
Total Xylenes	390	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Client: WOODWARD-CLYDE CONSULTANTS Sample: B-6-7-3

Job No: 12944

Date Matrix: Soil

Analyzed: 23-Jun-89 Samp Amt: 1 gm Analysis: EPA 601/602 (8010/8020) Dil Fact: 5000

Compound	Concentration mg/Kg	Detection Limits
Chloromethane	ND	25
Bromomethane	ND	25
Vinyl Chloride	ND	15
Chloroethane	ND	25
Methylene Chloride	ND	125
1,1-Dichloroethylene	ND	15
1,1-Dichloroethane	ND	10
trans-1,2-Dichloro hylene	ND	7.5
Trichlorofluoromethane	ND	10
Chloroform	ND	7.5
1,2-Dichloroethane	ND	10
1,1,1-Trichloroethane	ND	7.5
Carbon Tetrachloride	ND	7.5
Bromodichloromethane	ND	7.5
1,1,2,2-Tetrachloroethane	ND	7.5
1,2-Dichloropropane	ND	7.5
trans-1,3-Dichloropropylene	ND	7.5
Trichloroethylene	ND	7.5
Dibromochloromethane	ND	7.5
1,1,2-Trichloroethane	ND	7.5
Benzene	ND	5
cis-1,3-Dichloropropylene	ND	7.5
2-Chloroethyl Vinyl Ether	ND	20
Bromoform	ND	12.5
Tetrachloroethylene	ND	7.5
Toluene	48	5
Chlorobenzene	ND	25
Ethylbenzene	ND	5
Total Xylenes	21	5
1,3-Dichlorobenzene	ND	5 5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5

Client: WOODWARD-CLYDE CONSULTANTS Sample: B-6-7-4

Job No: 12944

Date Matrix: Soil

Analyzed: 23-Jun-89 Samp Amt: 1 gm Analysis: EPA 601/602 (8010/8020) Dil Fact: 1000

Compound	Concentration mg/Kg	Detection Limits
Chloromethane	ND	5
Bromomethane	ND	5
Vinyl Chloride	ND	3
Chloroethane	ND	5
Methylene Chloride	ND	25
1,1-Dichloroethylene	ND	3
1,1-Dichloroethane	ND	2
trans-1,2-Dichloroethylene	ND	1.5
Trichlorofluoromethane	ND	2
Chloroform	ND	1.5
1,2-Dichloroethane	ND	2
1,1,1-Trichloroethane	ND	1.5
Carbon Tetrachloride	ND	1.5
Bromodichloromethane	ND	1.5
1,1,2,2-Tetrachloroethane	ND	1.5
1,2-Dichloropropane	ND	1.5
trans-1,3-Dichloropropylene	ND	1.5
Trichloroethylene	ND	1.5
Dibromochloromethane	ND	1.5
1,1,2-Trichloroethane	ND	1.5
Benzene	ND	1
cis-1,3-Dichloropropylene	ND	1.5
2-Chloroethyl Vinyl Ether	ND	4
Bromoform	ND	2.5
Tetrachloroethylene	ND	1.5
Toluene	19	1
Chlorobenzene	ND	5
Ethylbenzene	ND	1
Total Xylenes	6	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
1,2-Dichlorobenzene	ND	1

Client: WOODWARD-CLYDE CONSULTANTS Sample: B-6-9-3

Job No: 12944

Date Matrix: Soil

Analyzed: 23-Jun-89 Samp Amt: 1 gm Analysis: EPA 601/602 (8010/8020) Dil Fact: 1000

Compound	Concentration mg/Kg	Detection Limits
Chloromethane	 אD	 5
Bromomethane	ND	5
Vinyl Chloride	ND	3
Chloroethane	ND	5
Methylene Chloride	ND	25
1,1-Dichloroethylene	ND	5
1,1-Dichloroethane	ND	2
trans-1,2-Dichloroethylene	ND	1.5
Trichlorofluoromethane	ND	2
Chloroform	ND	1.5
1,2-Dichloroethane	ND	2
1,1,1-Trichloroethane	59	1.5
Carbon Tetrachloride	ND	1.5
Bromodichloromethane	ND	1.5
1,1,2,2-Tetrachloroethane	ND	1.5
1,2-Dichloropropane	ND	1.5
trans-1,3-Dichloropropylene	ND	1.5
Trichloroethylene	23	1.5
Dibromochloromethane	ND	1.5
1,1,2-Trichloroethane	ND	1.5
Benzene	ND	1
cis-1,3-Dichloropropylene	ND	1.5
2-Chloroethyl Vinyl Ether	ND	4
Bromoform	ND	2.5
Tetrachloroethylene	ND	1.5
Toluene	320	1
Chlorobenzene	ND	5
Ethylbenzene	2.9	5 1
Total Xylenes	21	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
1,2-Dichlorobenzene	ND	1

Client: WOODWARD-CLYDE CONSULTANTS Sample: B-6-11-3

Job No: 12944

Date Matrix: Soil

Analyzed: 23-Jun-89 Samp Amt: 0.1 gm Analysis: EPA 601/602 (8010/8020) Dil Fact: 1

Compound	Concentration mg/Kg	Detection Limits
Chloromethane	ND	0.05
Bromomethane	ND	0.05
Vinyl Chloride	ND	0.03
Chloroethane	ND	0.05
Methylene Chloride	ND	0.25
1,1-Dichloroethylene	0.06	0.03
1,1-Dichloroethane	0.09	0.02
trans-1,2-Dichloroethylene	ND	0.02
Trichlorofluoromethane	ND	0.02
Chloroform	ND	0.02
1,2-Dichloroethane	ND	0.02
1,1,1-Trichloroethane	0.53	0.02
Carbon Tetrachloride	ND	0.02
Bromodichloromethane	ND	0.02
1,1,2,2-Tetrachloroethane	ND	0.02
1,2-Dichloropropane	ND	0.02
trans-1,3-Dichloropropylene	ND	0.02
Trichloroethylene	0.035	0.02
Dibromochloromethane	ND	0.02
1,1,2-Trichloroethane	ND	0.02
Benzene	ND	0.01
cis-1,3-Dichloropropylene	ND	0.02
2-Chloroethyl Vinyl Ether	ND	0.04
Bromoform	ND	0.03
Tetrachloroethylene	ND	0.02
Toluene	0.31	0.01
Chlorobenzene	ND	0.04
Ethylbenzene	ND	0.01
Total Xylenes	0.03	0.01
1,3-Dichlorobenzene	ND	0.01
1,4-Dichlorobenzene	ND	0.01
1,2-Dichlorobenzene	ND	0.01

Client: WOODWARD-CLYDE CONSULTANTS Sample: B-6-13-3

Job No: 12944

Date Matrix: Soil

Analyzed: 23-Jun-89 Samp Amt: 1 gm Analysis: EPA 601/602 (8010/8020) Dil Fact: 1000

Compound	Concentration mg/Kg	Detection Limits
Chloromethane	ND	5
Bromomethane	ND	5
Vinyl Chloride	ND	3
Chloroethane	ND	5
Methylene Chloride	ND	25
1,1-Dichloroethylene	ND	3
1,1-Dichloroethane	ND	2
trans-1,2-Dichloroethylene	ND	1.5
Trichlorofluoromethane	ND	. 2
Chloroform	ND	1.5
1,2-Dichloroethane	ND	2
1,1,1-Trichloroethane	7.7	1.5
Carbon Tetrachloride	ND	1.5
Bromodichloromethane	ND	1.5
1,1,2,2-Tetrachloroethane	ND	1.5
1,2-Dichloropropane	ND	1.5
trans-1,3-Dichloropropylene	ND	1.5
Trichloroethylene	ND	1.5
Dibromochloromethane	ND	1.5
1,1,2-Trichloroethane	ND	1.5
Benzene	ND	1
cis-1,3-Dichloropropylene	ND	1.5
2-Chloroethyl Vinyl Ether	ND	4
Bromoform	ND	2.5
Tetrachloroethylene	ND	1.5
Toluene	9.9	1
Chlorobenzene	ND	4
Ethylbenzene	ND	1
Total Xylenes	2.9	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
1,2-Dichlorobenzene	ND	1

Client: WOODWARD-CLYDE CONSULTANTS Sample: B-7-7-3

Job No: 12944

Date Matrix: Soil

Analyzed: 25-Jun-89 Samp Amt: 1 gm Analysis: EPA 601/602 (8010/8020) Dil Fact: 40

Compound	Concentration mg/Kg	Detection Limits
Chloromethane	ND	0.2
Bromomethane	ND	0.2
Vinyl Chloride	ND	0.2
Chloroethane	ND	0.2
Methylene Chloride	ND	1
1,1-Dichloroethylene	ND	0.12
1,1-Dichloroethane	ND	0.08
trans-1,2-Dichloroethylene	ND	0.06
Trichlorofluoromethane	ND	0.08
Chloroform	ND	0.06
1,2-Dichloroethane	ND	0.08
1,1,1-Trichloroethane	0.15	0.06
Carbon Tetrachloride	ND	0.06
Bromodichloromethane	ND	0.06
1,1,2,2-Tetrachloroethane	ND	0.06
1,2-Dichloropropane	ND	0.06
trans-1,3-Dichloropropylene	ND	0.06
Trichloroethylene	0.09	0.06
Dibromochloromethane	ND	0.06
1,1,2-Trichloroethane	ND	0.06
Benzene	ND	0.04
cis-1,3-Dichloropropylene	ND	0.06
2-Chloroethyl Vinyl Ether	ND	0.2
Bromoform	ND	0.1
Tetrachloroethylene	ND	0.06
Toluene	1.7	0.04
Chlorobenzene	ND	0.33
Ethylbenzene	ND	0.04
Total Xylenes	0.09	0.04
1,3-Dichlorobenzene	ND	0.08
1,4-Dichlorobenzene	ND	0.08
1,2-Dichlorobenzene	ND	0.08

Client: WOODWARD CLYDE CONSULTANTS Sample: B-7-8-3

Job No: 12944

Date Matrix: Soil

Analyzed: 25-June-89 Samp Amt: 1 gm Analysis: EPA 601/602 (8010/8020) Dil Fact: 1000

	Concentration	Detection
Compound	mg/Kg	Limits
Chloromethane	ND	5
Bromomethane	ND	5
Vinyl Chloride	ND	3
Chloroethane	ND	5
Methylene Chloride	ND	25
1,1-Dichloroethylene	ND	3
1,1-Dichloroethane	ND	2
trans-1,2-Dichloroethylene	ND	1.5
Trichlorofluoromethane	ND	2
Chloroform	ND	1.5
1,2-Dichloroethane	ND	2 .
1,1,1-Trichloroethane	ND	1.5
Carbon Tetrachloride	ND	1.5
Bromodichloromethane	ND	1.5
1,1,2,2-Tetrachloroethane	ND	1.5
1,2-Dichloropropane	ND	1.5
trans-1,3-Dichloropropylene	ND	1.5
Trichloroethylene	ND	1.5
Dibromochloromethane	ND	1.5
1,1,2-Trichloroethane	ND	1.5
Benzene	ND	1
cis-1,3-Dichloropropylene	ND	1.5
2-Chloroethyl Vinyl Ether	ND	4
Bromoform	ND	2.5
Tetrachloroethylene	ND	1.5
Toluene	ND	1
Chlorobenzene	ND	5
Ethylbenzene	ND	5 1
Total Xylenes	1	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	ī
1,2-Dichlorobenzene	ND	ī



Client: WOODWARD-CLYDE CONSULTANTS Sample: B-7-9-3

Job No: 12944

Date Matrix: Soil

Analyzed: 25-Jun-89 Samp Amt: 1 gm Analysis: EPA 601/602 (8010/8020) Dil Fact: 1000

Compound	Concentration mg/Kg	Detection Limits
Chloromethane	ND	<u>-</u> 5
Bromomethane	ND	5
Vinyl Chloride	ND	3
Chloroethane	ND	5
Methylene Chloride	ND	25
1,1-Dichloroethylene	ND	3
1,1-Dichloroethane	ND	2
trans-1,2-Dichloroethylene	ND	1.5
Trichlorofluoromethane	ND	2
Chloroform	ND	1.5
1,2-Dichloroethane	ND	2
1,1,1-Trichloroethane	10	1.5
Carbon Tetrachloride	ND	1.5
Bromodichloromethane	ND	1.5
1,1,2,2-Tetrachloroethane	ND	1.5
1,2-Dichloropropane	ND	1.5
trans-1,3-Dichloropropylene	ND	1.5
Trichloroethylene	ND	1.5
Dibromochloromethane	ND	1.5
1,1,2-Trichloroethane	ND	1.5
Benzene	ND	1
cis-1,3-Dichloropropylene	ND	1.5
2-Chloroethyl Vinyl Ether	ND	4
Bromoform	ND	2.5
Tetrachloroethylene	ND	1.5
Toluene	40	1
Chlorobenzene	ND	1.1
Ethylbenzene	ND	1
Total Xylenes	1	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
1,2-Dichlorobenzene	ND	1

Client: WOODWARD-CLYDE CONSULTANTS

Job No: 12944

Date

Matrix: Soil Analyzed: 25-Jun-89

Samp Amt: 1 gm Analysis: EPA 601/602 (8010/8020) Dil Fact: 1000

Sample: B-7-9-4

Compound	Concentration mg/Kg	Detection Limits
Chloromethane	ND	5
Bromomethane	ND	5
Vinyl Chloride	ND	3
Chloroethane	ND	5
Methylene Chloride	ND	25
1,1-Dichloroethylene	ND	3
1,1-Dichloroethane	ND	2
trans-1,2-Dichloroethylene	ND	1.5
Trichlorofluoromethane	ND	2
Chloroform	ND	1.5
1,2-Dichloroethane	ND	2
1,1,1-Trichloroethane	12	1.5
Carbon Tetrachloride	ND	1.5
Bromodichloromethane	ND	1.5
1,1,2,2-Tetrachloroethane	ND	1.5
1,2-Dichloropropane	ND	1.5
trans-1,3-Dichloropropylene	ND	1.5
Trichloroethylene	ND	1.5
Dibromochloromethane	ND	1.5
1,1,2-Trichloroethane	ND ·	1.5
Benzene	ND	1
cis-1,3-Dichloropropylene	ND	1.5
2-Chloroethyl Vinyl Ether	ND	4
Bromoform	ND	2.5
Tetrachloroethylene	ND	1.5
Toluene	25	1
Chlorobenzene	ND	8.3
Ethylbenzene	ND	1
Total Xylenes	ND	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
1,2-Dichlorobenzene	ND	1

ND-Not Detected. The limit of detection is reported above.

BOE-C6-0071130

Client: WOODWARD-CLYDE CONSULTANTS Sample: B-7-11-3

Job No: 12944

Date Matrix: Soil

Analyzed: 25-Jun-89 Samp Amt: 1 gm Analysis: EPA 601/602 (8010/8020) Dil Fact: 1000

	Concentration	Detection
Compound	mg/Kg	Limits

Chloromethane	ND	5
Bromomethane	ND	5
Vinyl Chloride	ND	3
Chloroethane	ND	5
Methylene Chloride	ND	25
1,1-Dichloroethylene	57	3
1,1-Dichloroethane	ND	2
trans-1,2-Dichloroethylene	ND	1.5
Trichlorofluoromethane	ND	2
Chloroform	ND	1.5
1,2-Dichloroethane	ND	2
1,1,1-Trichloroethane	880	1.5
Carbon Tetrachloride	ND	1.5
Bromodichloromethane	ND	1.5
1,1,2,2-Tetrachloroethane	ND	1.5
1,2-Dichloropropane	ND	1.5
trans-1,3-Dichloropropylene	ND	1.5
Trichloroethylene	ND	1.5
Dibromochloromethane	ND	1.5
1,1,2-Trichloroethane	4	1.5
Benzene	ND	1
cis-1,3-Dichloropropylene	ND	1.5
2-Chloroethyl Vinyl Ether	ND	4
Bromoform	ND	2.5
Tetrachloroethylene	ND	1.5
Toluene	41	1
Chlorobenzene	ND	8.3
Ethylbenzene	ND	1
Total Xylenes	1.7	1
1,3-Dichlorobenzene	ND	ī
1,4-Dichlorobenzene	ND	1
1,2-Dichlorobenzene	ND	ī
_,	•••	-

Client: WOODWARD CLYDE CONSULTANTS Sample: B-7-13-3

Job No: 12944

Date

Matrix: Analyzed: 26-JUNE-89

Samp Amt: 1 gm Analysis: EPA 601/602 (8010/8020) Dil Fact: 50

Soil

Compound	Concentration mg/Kg	Detection Limits
Chloromethane	ND	250
Bromomethane	ND	250
Vinyl Chloride	ND	150
Chloroethane	ND	250
Methylene Chloride	20000	1250
1,1-Dichloroethylene	600	150
1,1-Dichloroethane	ND	100
trans-1,2-Dichloroethylene	ND	75
Trichlorofluoromethane	ND	100
Chloroform	ND	75
1,2-Dichloroethane	ND	100 -
1,1,1-Trichloroethane	59000	75
Carbon Tetrachloride	ND	75
Bromodichloromethane	ND	75
1,1,2,2-Tetrachloroethane	ND	75
1,2-Dichloropropane	ND	75
trans-1,3-Dichloropropylene	ND	75
Trichloroethylene	ND	75
Dibromochloromethane	ND	75
1,1,2-Trichloroethane	ND	75
Benzene	ND	50
cis-1,3-Dichloropropylene	ND	75
2-Chloroethyl Vinyl Ether	ND	200
Bromoform	ND	125
Tetrachloroethylene	140	75
Toluene	450	50
Chlorobenzene	ND	300
Ethylbenzene	ND	50
Total Xylenes	ND	50
1,3-Dichlorobenzene	ND	100
1,4-Dichlorobenzene	ND	100
1,2-Dichlorobenzene	ND	100

Woodward-Clyde Consultants



PAGE 2 OF 3

DATE 6 / 13/89

CHAIN OF CUSTODY RECORD

PROJECT NAME: DOUGLAS ALROPATT COMPANY

Sample	Number	Location		Sample	Type of Container		of Preservation	Analysi	s Required *
		<u> </u>	Material	Method	00 xc = 10-	Temp	Chemical	COLUTA	TALTIN
3-6-1	11-4	B-6	SOL	Moo.	BRASS TUBES	ICE	<u> </u>	· · · · ·	T AKTOR
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8-6	-12-3								
B-6.	12-4							<u> </u>	
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	2-3	 		 		++-			
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B 1-	3-4						 		
B-7.	-4-3					\bot			
B-7.	-4-4					\bot			
B-7-	5-3					\bot	<u> </u>		
B-7.	-5-4								
B-7.	-6-3		 						
B 7	/ / 4	 	+	+ + -					
0-7	-0-1 1-22	+-\⊬-	+\/	+	+ V _	VAV.	10		
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Woodward-Clyde Consultants



SHIPMENT NO .: _ F PAGE / OF 3

CHAIN OF CUSTODY RECORD DATE 6/13/89 PROJECT NAME: POKKAS AIRCRAFT COWARD PROJECT NO .: 8941863 J-786K J Type of Preservation Type of Sample Analysis Required * Type of Container Location Sample Number Temp Chemical Material Method COMPACT: Alistak REASS TUBE NONE MOD. 100 B-6 SOIL B-6-1-3 Callendo COLIF. B-6-1-4 B-6-2-3 B-6-2-4 B-6-4-3 B-6-5-3 B-6-5-B-67-4 B-6-8-4 B-6-9-3 B-6-9-9 B-6-10-3 B-6-10-4 Total Number of Samples Shipped: 55 Sampler's Signature: Received B Date Relinquished By: 611318 Signature_ Signature_ Printed Name_ Printed Name Company - Company_ 4;45 WAS Reason Date Received By: Relinquished By: Signature ___ Signature ____ Printed Name Printed Name__ Time 5/35 Company_ Company___ 012944 Reason____ Date Received By: Relinquished By: Signature_ Signature_ Printed Name_ Printed Name_ Time Company___ Company___ Reason ____ Date Received By: Relinquished By: Signature_ Signature_ Printed Name___ Printed Name ___ Time Company___ Company____ Reason. Special Shipment / Handling / Storage Requirements:

* Note - This does not constitute authorization to proceed with analysis

LA/OR-0183-421

SHIPMENT NO.: 4 Woodward-Clyde Consultants PAGE 3 OF 3 CHAIN OF CUSTODY RECORD DATE 6 /13/89 PROJECT NAME: DOULLAS ARCAAFT CONTRALY 8941868J- TASK! PROJECT NO .: _ Type of Preservation Type of Sample Analysis Required * Location Type of Container Sample Number Temp Chemical Material Method KE ME CONTACT: MOD. Sol Alistaile CAUF. Cattender Total Number of Samples Shipped: 55 Sampler's Signature: Date Received By: Relinquished By: 41318 Signature_ Signature_ Classing Printed Name_ Printed Name Company Company__ Reason__ Received By: A Relinquished By: Signature C Signature ____ Printed Name Printed Name_ Time Company__ Company___ **b** 1 2 9 4 4 13:33 Reason_ Date Received By: Relinquished By: Signature_ Signature_ Printed Name_ Printed Name_ Time Company___ Company___ Reason__ Date Received By: Relinquished By: Signature_ Signature_ Printed Name_ Printed Name _ Time Company___ Company_ Reason ___

Special Shipment / Handling / Storage Requirements:

* Note - This does not constitute authorization to proceed with analysis

LA/OR-0183-421

RECEIVED

June 30, 1989

Santa Ana, CA

105 0 8 1302 WCC-SANTA

> WEST COAST **ANALYTICAL** SERVICE, INC.

Α

AMALY LOAD CHEMISTS

Dr. Alistaire Callender

JOB NO.

Attn:

12962

WOODWARD-CLYDE CONSULTANTS

203 N. Golden Circle Drive

LABORATORY REPORT

Samples Received: Fifty-six (56) soils

Date Received: 6-15-89

Date Released for Analysis: 6-20-89

92705

Purchase Order No: Proj#: 8941863J/Task 1-Douglas Aircraft

The samples were analyzed as follows:

Samples Analyzed

<u>Analysis</u>

Results

Eight (8) soils

Halogenated and Aromatic

Volatile Organics by EPA 8010/8020

Data Sheets

Page 1 of 1

Shelley Stuart

Senior Chemist

D.J. Northington, Ph.D.

Technical Director

Client: WOODWARD CLYDE CONSULTANTS Sample: B-8-10-3

Job No: 12962

Date Matrix: Soil

Analyzed: 28-JUNE-89 Samp Amt: 0.1 gm Analysis: EPA 601/602 (8010/8020) Dil Fact: 1

Compound	Concentration mg/Kg	Detection Limits
Chloromethane	ND	0.05
Bromomethane	ND	0.05
Vinyl Chloride	ND	0.03
Chloroethane	ND	0.05
Methylene Chloride	ND	0.25
1,1-Dichloroethylene	ND	0.03
1,1-Dichloroethane	ND	0.02
trans-1,2-Dichloroethylene	ND	0.02
Trichlorofluoromethane	ND	0.02
Chloroform	ND	0.02
1,2-Dichloroethane	ND	0.02
1,1,1-Trichloroethane	ND	0.02
Carbon Tetrachloride	ND	0.02
Bromodichloromethane	ND	0.02
1,1,2,2-Tetrachloroethane	ND	0.02
1,2-Dichloropropane	ND	0.02
trans-1,3-Dichloropropylene	ND	0.02
Trichloroethylene	ND	0.02
Dibromochloromethane	ND	0.02
1,1,2-Trichloroethane	ND	0.02
Benzene	ND	0.01
cis-1,3-Dichloropropylene	ND	0.02
2-Chloroethyl Vinyl Ether	ND	0.04
Bromoform	ND	0.03
Tetrachloroethylene	ND	0.02
Toluene	0.27	0.01
Chlorobenzene	ND	0.01
Ethylbenzene	ND	0.01
Total Xylenes	ND	0.01
1,3-Dichlorobenzene	ND	0.01
1,4-Dichlorobenzene	ND	0.01
1,2-Dichlorobenzene	ND	0.01

Client: WOODWARD CLYDE CONSULTANTS Sample: B-8-11-3

Job No: 12962

Date Matrix: Soil

Analyzed: 28-JUNE-89 Samp Amt: 0.1 gm Analysis: EPA 601/602 (8010/8020) Dil Fact: 1

Compound	Concentration mg/Kg	Detection Limits
Chloromethane	ND	0.05
Bromomethane	ND	0.05
Vinyl Chloride	ND	0.03
Chloroethane	ND	0.05
Methylene Chloride	ND	0.25
1,1-Dichloroethylene	ND	0.03
1,1-Dichloroethane	ND	0.02
trans-1,2-Dichloroethylene	ND	0.02
Trichlorofluoromethane	ИD	0.02
Chloroform	ND	0.02
1,2-Dichloroethane	ND	0.02
1,1,1-Trichloroethane	ND	0.02
Carbon Tetrachloride	ND	0.02
Bromodichloromethane	ND	0.02
1,1,2,2-Tetrachloroethane	ND	0.02
1,2-Dichloropropane	ND	0.02
trans-1,3-Dichloropropylene	ND	0.02
Trichloroethylene	ND	0.02
Dibromochloromethane	ND	0.02
1,1,2-Trichloroethane	ND	0.02
Benzene	ND	0.01
cis-1,3-Dichloropropylene	ND	0.02
2-Chloroethyl Vinyl Ether	ND	0.04
Bromoform	ND	0.03
Tetrachloroethylene	ND	0.02
Toluene	0.04	0.01
Chlorobenzene	ND	0.01
Ethylbenzene	ND	0.01
Total Xylenes	ND	0.01
1,3-Dichlorobenzene	ND	0.01
1,4-Dichlorobenzene	ND	0.01
1,2-Dichlorobenzene	ND	0.01

Client: WOODWARD-CLYDE CONSULTANTS

Analyzed: 28-Jun-89 Analysis: EPA 601/602 (8010/8020)

Job No: 12962

Date

Sample: B-8-12-3

Matrix: Soil

0.1 gm

Samp Amt: Dil Fact: 1

Compound	Concentration mg/Kg	Detection Limits
Chloromethane	ND	0.05
Bromomethane	ND	0.05
Vinyl Chloride	ND	0.03
Chloroethane	ND	0.05
Methylene Chloride	ND	0.25
1,1-Dichloroethylene	ND	0.03
1,1-Dichloroethane	ND	0.02
trans-1,2-Dichloroethylene	ND	0.02
Trichlorofluoromethane	ND	0.02
Chloroform	ND	0.02
1,2-Dichloroethane	ND	0.02
1,1,1-Trichloroethane	0.12	0.02
Carbon Tetrachloride	ND	0.02
Bromodichloromethane	ND	0.02
1,1,2,2-Tetrachloroethane	ND	0.02
1,2-Dichloropropane	ND	0.02
trans-1,3-Dichloropropylene	ND	0.02
Trichloroethylene	ND	0.02
Dibromochloromethane	ND	0.02
1,1,2-Trichloroethane	ND	0.02
Benzene	ND	0.01
cis-1,3-Dichloropropylene	ND	0.02
2-Chloroethyl Vinyl Ether	ND	0.04
Bromoform	ND	0.03
Tetrachloroethylene	ND	0.02
Toluene	0.06	0.01
Chlorobenzene	ND	0.07
Ethylbenzene	ND	0.01
Total Xylenes	ND	0.01
1,3-Dichlorobenzene	ND	0.01
1,4-Dichlorobenzene	ND	0.01
1,2-Dichlorobenzene	ND	0.01

Client: WOODWARD-CLYDE CONSULTANTS Sample: B-8-13-3

Job No: 12962

Date Matrix: Soil

Analyzed: 28-Jun-89 Samp Amt: 0.1 gm Analysis: EPA 601/602 (8010/8020) Dil Fact: 1

Compound	Concentration mg/Kg	Detection Limits
Chloromethane	ND	0.05
Bromomethane	ND	0.05
Vinyl Chloride	ND	0.03
Chloroethane	ND	0.05
Methylene Chloride	ND	0.25
1,1-Dichloroethylene	ИD	0.03
1,1-Dichloroethane	0.04	0.02
trans-1,2-Dichloroethylene	ND	0.02
Trichlorofluoromethane	ND	0.02
Chloroform	ND	0.02
1,2-Dichloroethane	ND	0.02
1,1,1-Trichloroethane	0.44	0.02
Carbon Tetrachloride	ND	0.02
Bromodichloromethane	ND	0.02
1,1,2,2-Tetrachloroethane	ND	0.02
1,2-Dichloropropane	ND	0.02
trans-1,3-Dichloropropylene	ND	0.02
Trichloroethylene	ND	0.02
Dibromochloromethane	ND	0.02
1,1,2-Trichloroethane	ND	0.02
Benzene	ND	0.01
cis-1,3-Dichloropropylene	ND	0.02
2-Chloroethyl Vinyl Ether	ND	0.04
Bromoform	ND	0.03
Tetrachloroethylene	ND	0.02
Toluene	1.0	0.01
Chlorobenzene	ND	0.07
Ethylbenzene	ND	0.01
Total Xylenes	ND	0.01
1,3-Dichlorobenzene	ND	0.01
1,4-Dichlorobenzene	ND	0.01
1,2-Dichlorobenzene	ND	0.01

Client: WOODWARD CLYDE CONSULTANTS Sample: B-8-14-3

Job No: 12962

Date Matrix: Soil

Analyzed: 28-JUNE-89 Samp Amt: 0.1 gm Analysis: EPA 601/602 (8010/8020) Dil Fact: 1

Compound	Concentration mg/Kg	Detection Limits
Chloromethane	ND	0.05
Bromomethane	ND	0.05
Vinyl Chloride	ND	0.03
Chloroethane	ND	0.05
Methylene Chloride	ND	0.25
1,1-Dichloroethylene	ND	0.03
1,1-Dichloroethane	ND	0.02
trans-1,2-Dichloroethylene	ND	0.02
Trichlorofluoromethane	ND	0.02
Chloroform	ND	0.02
1,2-Dichloroethane	ND	0.02
1,1,1-Trichloroethane	0.05	0.02
Carbon Tetrachloride	ND	0.02
Bromodichloromethane	ND	0.02
1,1,2,2-Tetrachloroethane	ND	0.02
1,2-Dichloropropane	ND	0.02
trans-1,3-Dichloropropylene	ND	0.02
Trichloroethylene	ND	0.02
Dibromochloromethane	ND	0.02
1,1,2-Trichloroethane	ND	0.02
Benzene	ND	0.01
cis-1,3-Dichloropropylene	ND	0.02
2-Chloroethyl Vinyl Ether	ND	0.04
Bromoform	ND	0.03
Tetrachloroethylene	ND	0.02
Toluene	25	0.01
Chlorobenzene	ND	0.01
Ethylbenzene	ND	0.01
Total Xylenes	ND	0.01
1,3-Dichlorobenzene	ND	0.01
1,4-Dichlorobenzene	ND	0.01
1,2-Dichlorobenzene	ND	0.01

Client: WOODWARD-CLYDE CONSULTANTS

Job No: 12962

Date Matrix: Soil

Analyzed: 28-Jun-89 Samp Amt: 0.1 gm Analysis: EPA 601/602 (8010/8020) Dil Fact: 1

Sample: B-9-9-3

Compound	Concentration mg/Kg	Detection Limits
Chloromethane	ND	0.05
Bromomethane	ND	0.05
Vinyl Chloride	ND	0.03
Chloroethane	ND	0.05
Methylene Chloride	ND	0.25
1,1-Dichloroethylene	ND	0.03
1,1-Dichloroethane	0.03	0.02
trans-1,2-Dichloroethylene	ND	0.02
Trichlorofluoromethane	ND	0.02
Chloroform	ND	0.02
1,2-Dichloroethane	ND	0.02
1,1,1-Trichloroethane	0.02	0.02
Carbon Tetrachloride	ND	0.02
Bromodichloromethane	ND	0.02
1,1,2,2-Tetrachloroethane	ND	0.02
1,2-Dichloropropane	ND	0.02
trans-1,3-Dichloropropylene	ND	0.02
Trichloroethylene	0.08	0.02
Dibromochloromethane	ND	0.02
1,1,2-Trichloroethane	ND	0.02
Benzene	ND	0.01
cis-1,3-Dichloropropylene	ND	0.02
2-Chloroethyl Vinyl Ether	ND	0.04
Bromoform	ND	0.03
Tetrachloroethylene	ND	0.02
Toluene	0.1	0.01
Chlorobenzene	ND	0.07
Ethylbenzene	ND	0.01
Total Xylenes	ND	0.01
1,3-Dichlorobenzene	ND	0.01
1,4-Dichlorobenzene	ND	0.01
1,2-Dichlorobenzene	ND	0.01

Client: WOODWARD CLYDE CONSULTANTS Sample: B-9-11-3

Job No: 12962

Date Matrix: Soil

Analyzed: 28-JUNE-89 Samp Amt: 0.1 gm Analysis: EPA 601/602 (8010/8020) Dil Fact: 1

Compound	Concentration mg/Kg	Detection Limits
Chloromethane	ND	0.05
Bromomethane	ND	0.05
Vinyl Chloride	ND	0.03
Chloroethane	ND	0.05
Methylene Chloride	ND	0.25
1,1-Dichloroethylene	ND	0.03
1,1-Dichloroethane	ND	0.02
trans-1,2-Dichloroethylene	ND	0.02
Trichlorofluoromethane	ND	0.02
Chloroform	ND	0.02
1,2-Dichloroethane	ND	0.02
1,1,1-Trichloroethane	ND	0.02
Carbon Tetrachloride	ND	0.02
Bromodichloromethane	ND	0.02
1,1,2,2-Tetrachloroethane	ND	0.02
1,2-Dichloropropane	ND	0.02
trans-1,3-Dichloropropylene	ND	0.02
Trichloroethylene	0.02	0.02
Dibromochloromethane	ND	0.02
1,1,2-Trichloroethane	ND	0.02
Benzene	ND	0.01
cis-1,3-Dichloropropylene	ND	0.02
2-Chloroethyl Vinyl Ether	ND	0.04
Bromoform	ND	0.03
Tetrachloroethylene	ND	0.02
Toluene	0.11	0.01
Chlorobenzene	ND	0.01
Ethylbenzene	ND	0.01
Total Xylenes	ND	0.01
1,3-Dichlorobenzene	ND	0.01
1,4-Dichlorobenzene	ND	0.01
1,2-Dichlorobenzene	ND	0.01

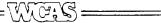
Client: WOODWARD-CLYDE CONSULTANTS Sample: B-9-12-3

Job No: 12962

Date Matrix: Soil

Analyzed: 28-Jun-89 Samp Amt: 0.1 gm Analysis: EPA 601/602 (8010/8020) Dil Fact: 1

Compound	Concentration mg/Kg	Detection Limits
Chloromethane	ND	0.05
Bromomethane	ND	0.05
Vinyl Chloride	ND	0.03
Chloroethane	ND	0.05
Methylene Chloride	ND	0.25
1,1-Dichloroethylene	ND	0.03
1,1-Dichloroethane	ND	0.02
trans-1,2-Dichloroethylene	ND	0.02
Trichlorofluoromethane	ND	0.02
Chloroform	ND	0.02
1,2-Dichloroethane	ND	0.02
1,1,1-Trichloroethane	0.03	0.02
Carbon Tetrachloride	ND	0.02
Bromodichloromethane	ND	0.02
1,1,2,2-Tetrachloroethane	ND	0.02
1,2-Dichloropropane	ND	0.02
trans-1,3-Dichloropropylene	ND	0.02
Trichloroethylene	ND	0.02
Dibromochloromethane	ND	0.02
1,1,2-Trichloroethane	ND	0.02
Benzene	ND	0.01
cis-1,3-Dichloropropylene	ND	0.02
2-Chloroethyl Vinyl Ether	ND	0.04
Bromoform	ND	0.03
Tetrachloroethylene	ND	0.02
Toluene	0.06	0.01
Chlorobenzene	ND	0.07
Ethylbenzene	ND	0.01
Total Xylenes	ND	0.01
1,3-Dichlorobenzene	ND	0.01
1,4-Dichlorobenzene	ND	0.01
1,2-Dichlorobenzene	ND	0.01



Woodward-Clyde Consultants



CHAIN OF CUSTODY RECORD

SHIPMENT NO .: 5

PROJECT NAME: DOGLAS AIRCRAFT CO. PROJECT NO .: 3941863 J - TOSK 1

	T.	Type of	Sample	Tuna	Container	١ ا	Гуре	of Pres	ervation	Analys	sis Require	a• l
Sample Number	Location	Material	Method	Type of	Container	Ter	пp	Ch	emical			
B-8-1-3	3-2	2011	700.	220	ISS TUBE	10	E	Λ	TONE	COMB	ST :	
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3)			\Box					735-68	
3-2-3			 	 				 		1		
3-8-2-4	<u> </u>		-	 	}	╁╌┧		 -	 		-	-
B-8-3-3				ļ		\vdash		 	ļ			
R-2-3-4					 	-		-		 		
13-8-4-3								L				
2-2-4-4								<u> </u>				
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B-8-6-3	+	+	+	 		+	 					\neg
8-8-6-4	 	 	 	 	 	+	 	 	 			
3-8-7-3	 		 	 	ļ — —	+	-	╁	<u></u>			$\neg \neg$
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3-8-8-4				<u> </u>		1_						
13-8-9-3												
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3-8-10-3	+ + -	1 1			1				1/			
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$\frac{3-8-10-9}{\text{Total Number of}}$	Samples St	inned: C	/ Sample	er's Signat	ure:	De la constante	1 de 1	A Car				
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Company		WCC		Co	mpany	_A	-1	<u> </u>			- 9:50	
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Company	+1-1	L		~- ~	iiipairy	-	∀ ∪	1	MISA	0 2	13,3	<u> 50 </u>
Reason				Baca	ived By:						Dat	te
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1												

* Note — This does not constitute authorization to proceed with analysis

Woodward-Clyde Consultants



CHAIN OF CUSTODY RECORD

SHIPMENT NO.: PAGE 2 OF 3

	PROJE	CT NAME:	DOUGE	LAS AIRCAF	 CD	DATE	<u> 21171.6</u>	<u>-</u>
	PROJE	CT NO.:		1863 J- TOS				
Sample Number	Location	Type of Material	Sample Method	Type of Container	Type Temp	of Preservation Chemical	Analysis Req	juired *
B-311-3	3-8	SOIL	,400.	BRASS TUBE	KE	NOME	CONTACT:	
B-8-11-4			COLIF.				Alistaire	,
B-8-12-3			1				Callend	201
B-8-12-4		<u> </u>			1-1-1		1(714) 8,5	5-626
8-8-13-3	<u> </u>	 			+		+	
B-2-13-4		 			+		+	
B-8-14-3	+-\/-		 		+ + -			
B-8-14-4 B-9-1-3	B-9	 						
B-9-1-4	15-7	+						
B-9-2-3			 					~ .
B-9-2-4								
3-9-3-3								
B-9-3-4					\bot			
B-9-4-3					1 1			
B-9-4-4					1			
B-9-5-3	<u> </u>	11-						
89-5-9	 	 	 		1		_	
B-9-6-3	1	1-1/	 \	\	+ 5			
13-9-6-4		10	C Sample	r's Signature:	O.B.	Had.		
Total Number of	Samples Sr	1 ppea: 5	Z Sample	Received By:	7			Date
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Signature Printed Name	Letin	P. Sie	ندح	Deigrad Name			 	Time
CompanyA Reason	- [Company	WCA	8 h12		2:30p
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Signature								<u>′ </u>
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Signature Printed Name								Time
Company				•				111116
Reason					~		=	
Special Shipment					∡ei ¢			
Note - Inis o	oes not co	institute aut	JEUN ZAUUN	to proceed with analy	7 3 3	****	LA/OF	7-0183-4

Woodward-Clyde Consultants



CHAIN OF CUSTODY RECORD

SHIPMENT NO.: 5

PAGE 3 OF 3

PROJECT NAME: DOUGUAS AIRCRAFT CO. DATE 6 11418

PROJECT NO.: 8941863 J-TASK !

	.	Type of	Sample	Type of Container	Туре	of Preservation	Analysi	s Required *
Sample Number	Location	Material	Method		Temp	Chemical		
R-9-7-3	13-9	Soil	MOD	BRISS TUBE	105	NONE	CONTA	
39-7-4	Ī		CALIF.				Alista	
13-9-2-3			1				I Cal	6265
1-9-2-4							(714)	835-688
0-9-9-3								
0 0 0 1								
0.0-10-2	 	-						
8-9-10-5	+	 	 					
B-9-10-4	}	 	 					
3-9-11-5	 		} - 		+++			
(3-3)-11-4	 	 	 		+-+-			-
<u>B-9-12-5</u>	 		 		+		 	
<u> 8-9-12-4</u>	1	 	 		+			
B-9-13-3			1					
B-9-13-4		_	<u> </u>		+			
B-9-14-3			1-1/-					
B-7-14-6		<u> </u>		V	V	V		
•								
					h	21		
Total Number of	Samples St	ipped: 5	∠ Sample	r's Signature:	ALP 1	Holen-	<u> </u>	
Relinguished By:	DA	20.		Received By:	6	00.		Date
Signature	TON	Har.	\sim	Signature	my	- Augu		6/15/89
Printed Name	Per	T Glass	M	Printed Name	Lack.	1 r. Despe	<u> </u>	Time
Company	Sola NI		Was	Company				9:50
Reason_to_	<u> </u>	7		Received By:	- AD.			Date
Relinquished By: Signature	P	Line	٠.	Signature_	sul L	ichards		10/15/89
Printed Name	Lerry	Pale	25	Printed Name.		1012	969	Time
Company	1-1	0		Company	WCAS	1012	/ 0 2	12.30
Reason						Territoria de la constantina della constantina d		1
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Signature								
Printed Name				_				Time
Company Reason								
Relinguished By:				Received By:				Date
Signature				Signature				- _ / _ /
Printed Name								Time
Company				Company				_
Reason								

* Note — This does not constitute authorization to proceed with analysis

LA/OR-0183-421

WEST COAST ANALYTICAL SERVICE, INC.

WOODWARD-CLYDE CONSULTANTS 203 N. Golden Circle Drive Santa Ana, CA 92705

Attn:

Dr. Alistaire Callender

JOB NO.

13191

A

LABORATORY REPORT

Samples Received: Nine (9) liquids in quadruplicate and one (1)

liquid in duplicate

Date Received: 7-13-89

Date Released for Analysis: 7-17-89

Purchase Order No: Proj#: 8941863J-Task 1/Douglas Aircraft

The samples were analyzed as follows:

Samples Analyzed

<u>Analysis</u>

Results

Fifteen (15) liquids

Volatile Organics

by EPA 624

Data Sheets

Page 1 of 1

Michael Shelton Senior Chemist

B. Michael Hovanec Senior Staff Chemist CLIENT: WOODWARD-CLYDE SAMPLE: D.I.-A

WCAS JOB #: 13191

DATE RECEIVED: 07/13/89 RUN NUMBER: 13191V1
DATE EXTRACTED: 07/24/89 SAMPLE AMOUNT: 5ML
DATE ANALYZED: 07/24/89 MATRIX: WATER

CAS #	COMPOUND	CONCENTRATION	DET LIMIT
			========
			_
67-64-1	ACETONE	ND	5.
71-43-2	BENZENE	ND	1.
75-27-4	BROMODICHLOROMETHANE	ND	1.
75-25-2	BROMOFORM	ND	1.
74-83-9	BROMOMETHANE	ND	5.
78-93-3	· · · · · · · · · · · · · · · · · · ·	ND	5.
75-15-0	CARBON DISULFIDE	ND	1.
56-23-5	CARBON TETRACHLORIDE	ND ND	1.
108-90-7	CHLOROBENZENE	ND	1.
75-00-3	CHLOROETHANE	ND	5.
110-75-8	2-CHLOROETHYLVINYLETHER	ND	10.
67-66-3	CHLOROFORM	ND	1.
74-87-3	CHLOROMETHANE	ND	5.
108-41-8	CHLOROTOLUENE	ND	1.
124-48-1	DIBROMOCHLOROMETHANE	ND	1.
95-50-1	1,2-DICHLOROBENZENE	ND	1.
541-73-1	1,3-DICHLOROBENZENE	ND	1.
106-46-7	1,4-DICHLOROBENZENE	ND	1.
75-34-3	1,1-DICHLOROETHANE	ND	1.
107-06-2	1,2-DICHLOROETHANE	ND	1.
75-35-4	1,1-DICHLOROETHYLENE	ND	1.
156-59-4	CIS-1,2-DICHLOROETHYLENE	ND	1.
156-60-5	TRANS-1,2-DICHLOROETHYLENE	ND	1.
78-87-5	1,2-DICHLOROPROPANE	ND	1.
10061-01-5		ND	1.
10061-02-6	TRANS-1,3-DICHLOROPROPENE	ND	1.
100-41-4	ETHYLBENZENE	ND	1.
106-93-4	ETHYLENE DIBROMIDE	ND	1.
76-13-1	FREON-TF	ND	1.
119-78-6	2-HEXANONE	ND	5.
75-09-2	METHYLENE CHLORIDE	ND	5.
108-10-1	4-METHYL-2-PENTANONE (MIBK)	ND	5.
100-42-5	STYRENE	ND	1.
79-34-5	1,1,2,2-TETRACHLOROETHANE	ND	1.
127-18-4	TETRACHLOROETHYLENE	ND	1.
109-99-9	TETRAHYDROFURAN	ND	5.
108-88-3	TOLUENE	ND	1.
71-55-6	1,1,1-TRICHLOROETHANE	ND	1.
79-00-5	1,1,2-TRICHLOROETHANE	ND	1.
79-01-6	TRICHLOROETHYLENE	ND	1.
75-69-4	TRICHLOROFLUOROMETHANE	ND	1.
108-05-4	VINYL ACETATE	ND	5.
75-01-4	VINYL CHLORIDE	ND	5.
95-47-6	TOTAL XYLENES	ND	1.

CLIENT:

WOODWARD-CLYDE

SAMPLE: D.I.-A

WCAS JOB #: 13191

UNITS: UG/L (PPB)

APPROXIMATE

COMPOUND NAME

FRACTION CONCENTRATION

1 NONE FOUND

CLIENT: WOODWARD-CLYDE SAMPLE: WCC-1S-1A

WCAS JOB #: 13191

DATE RECEIVED: 07/13/89 RUN NUMBER: 13191V10
DATE EXTRACTED: 07/21/89 SAMPLE AMOUNT: 250UL
DATE ANALYZED: 07/21/89 MATRIX: WATER

CAS #	COMPOUND	0011021102	DET LIMIT
67-64-1	ACETONE	ND	100.
71-43-2	BENZENE	ND	20.
75-27-4	BROMODICHLOROMETHANE	ND	20.
75-25-2	BROMOFORM	ND	20.
74-83-9	BROMOMETHANE	ND	100.
78-93-3	2-BUTANONE (MEK)	ND	100.
75-15-0	CARBON DISULFIDE	ND	20.
56-23-5	CARBON TETRACHLORIDE	ND	20.
108-90-7	CHLOROBENZENE	ND	20.
75-00-3	CHLOROETHANE	ND	100.
110-75-8	2-CHLOROETHYLVINYL ETHER	ND	200.
67-66-3	CHLOROFORM	ND	20.
74-87-3	CHLOROMETHANE	ND	100.
108-41-8	CHLOROTOLUENE	ND	20.
124-48-1	DIBROMOCHLOROMETHANE	ND	20.
95-50-1	1,2-DICHLOROBENZENE	ND	20.
541-73-1	1,3-DICHLOROBENZENE	ND	20.
106-46-7	1,4-DICHLOROBENZENE	ND	20.
75-34-3	1,1-DICHLOROETHANE	ND	20.
107-06-2	1,2-DICHLOROETHANE	ND	20.
75-35-4	1,1-DICHLOROETHYLENE	900.	20.
156-59-4	CIS-1,2-DICHLOROETHYLENE	ND	20.
156-60-5	TRANS-1,2-DICHLOROETHYLENE	ND	20.
78-87-5	1,2-DICHLOROPROPANE	ND	20.
10061-01-5	CIS-1,3-DICHLOROPROPENE	ND	20.
10061-02-6	TRANS-1,3-DICHLOROPROPENE	ND	20.
100-41-4	ETHYLBENZENE	ND	20.
106-93-4	ETHYLENE DIBROMIDE	ND	20.
76-13-1	FREON-TF	ND	20.
119-78-6	2-HEXANONE	ND	100.
75-09-2	METHYLENE CHLORIDE	ND	100.
108-10-1	4-METHYL-2-PENTANONE (MIBK)	ND	100.
100-42-5	STYRENE	ND	20.
79-34-5	1,1,2,2-TETRACHLOROETHANE	ND	20.
127-18-4	TETRACHLOROETHYLENE	ND	20.
109-99-9	TETRAHYDROFURAN	ND	100.
108-88-3	TOLUENE	ND	20.
71-55-6	1,1,1-TRICHLOROETHANE	67.	20.
79-00-5	1,1,2-TRICHLOROETHANE	ND	20.
79-01-6	TRICHLOROETHYLENE	2400.	20.
75-69-4	TRICHLOROFLUOROMETHANE	ND	20.
108-05-4	VINYL ACETATE	ND	100.
75-01-4	VINYL CHLORIDE	ND	100.
95-47-6	TOTAL XYLENES	ND	20.

CLIENT:

WOODWARD-CLYDE

SAMPLE: WCC-1S-1A

WCAS JOB #: 13191

UNITS: UG/L (PPB)

APPROXIMATE

COMPOUND NAME

FRACTION CONCENTRATION

1 NONE FOUND

CLIENT: WOODWARD-CLYDE SAMPLE: WCC-1S-1R

WCAS JOB #: 13191

DATE RECEIVED: 07/13/89 RUN NUMBER: 13191V13

DATE EXTRACTED: 07/21/89 SAMPLE AMOUNT: 5ML DATE ANALYZED: 07/21/89 MATRIX: WATER

CAS #	COMPOUND	CONCENTRATION	
67-64-1	ACETONE	иD	5.
71-43-2	BENZENE	ND	1.
75-27-4	BROMODICHLOROMETHANE	ND	1.
75-25-2	BROMOFORM	ND	1.
74-83-9	BROMOMETHANE	ND	5.
78-93-3	2-BUTANONE (MEK)	ND	5.
75-15-0	CARBON DISULFIDE	ND	1.
56-23-5	CARBON TETRACHLORIDE	ND	1.
108-90-7	CHLOROBENZENE	ND	1.
75-00-3	CHLOROETHANE	ND	5.
110-75-8	2-CHLOROETHYLVINYL ETHER	ND	10.
67-66-3	CHLOROFORM	ND	1.
74-87-3	CHLOROMETHANE	ND	5.
108-41-8		ND	1.
124-48-1		ND	1.
95-50-1		ND	1.
541-73-1	· · · · · · · · · · · · · · · · · · ·	ND	1.
	1,4-DICHLOROBENZENE	ND	1.
75-34-3		ND	1.
107-06-2		ND	1.
75-35-4	1,1-DICHLOROETHYLENE	ND	1.
156-59-4	CIS-1,2-DICHLOROETHYLENE	ND	1.
156-60-5	TRANS-1,2-DICHLOROETHYLENE	ND	1.
78-87-5	1,2-DICHLOROPROPANE	ND	1.
10061-01-5		ND	1.
10061-02-6	TRANS-1,3-DICHLOROPROPENE	ND	1.
100-41-4	ETHYLBENZENE	ND	1.
106-93-4	ETHYLENE DIBROMIDE	ND	1.
76-13-1	FREON-TF	ND	1.
119-78-6	2-HEXANONE	ND	5.
75-09-2	METHYLENE CHLORIDE	ND	5.
108-10-1	4-METHYL-2-PENTANONE (MIBK)	ND	5.
100-42-5	STYRENE	ND	1.
79-34-5	1,1,2,2-TETRACHLOROETHANE	ND	1.
127-18-4	TETRACHLOROETHYLENE	ND	1.
109-99-9	TETRAHYDROFURAN	ND	5.
108-88-3	TOLUENE	ND	1.
71-55-6	1,1,1-TRICHLOROETHANE	ND	1.
79-00-5	1,1,2-TRICHLOROETHANE	ND	1.
79-01-6	TRICHLOROETHYLENE	ND	1.
75-69-4	TRICHLOROFLUOROMETHANE	ND	1.
108-05-4	VINYL ACETATE	ND	5.
75-01-4	VINYL CHLORIDE	ND	5.
95-47-6	TOTAL XYLENES	ND	1.

CLIENT:

WOODWARD-CLYDE

SAMPLE: WCC-1S-1R

WCAS JOB #: 13191

UNITS: UG/L (PPB)

APPROXIMATE

COMPOUND NAME

FRACTION CONCENTRATION

1 NONE FOUND

CLIENT: WOODWARD-CLYDE SAMPLE: WCC-2S-1A

WCAS JOB #: 13191

DATE RECEIVED: 07/13/89 RUN NUMBER: 13191V1
DATE EXTRACTED: 07/20/89 SAMPLE AMOUNT: 5ML
DATE ANALYZED: 07/20/89 MATRIX: WATER

CAS #	COMPOUND	CONCENTRATION	
67-64-1	ACETONE	ND	5.
71-43-2	BENZENE	ND	1.
75-27-4	BROMODICHLOROMETHANE	ND	1.
75-25-2	BROMOFORM	ND	1.
74-83-9	BROMOMETHANE	ND	5.
78-93-3	2-BUTANONE (MEK)	ND	5.
75-15-0	CARBON DISULFIDE	ND	1.
56-23-5	CARBON TETRACHLORIDE	ND	1.
108-90-7	CHLOROBENZENE	ND	1.
75-00-3	CHLOROETHANE	ND	5.
110-75-8	2-CHLOROETHYLVINYL ETHER	ND	10.
67-66-3	CHLOROFORM	ND	1.
74-87-3	CHLOROMETHANE	ND	5.
108-41-8	CHLOROTOLUENE	ND	1.
124-48-1	DIBROMOCHLOROMETHANE	ND	1.
95-50-1	1,2-DICHLOROBENZENE	ND	1.
541-73-1		ND	1.
106-46-7		ND	1.
75-34-3	1,1-DICHLOROETHANE	ND	1.
107-06-2	1,2-DICHLOROETHANE	ND	1.
75-35-4	1,1-DICHLOROETHYLENE	ND	1.
156-59-4	CIS-1,2-DICHLOROETHYLENE	ND	1.
156-60-5	TRANS-1, 2-DICHLOROETHYLENE	ND	1.
78-87-5	1,2-DICHLOROPROPANE	ND	1.
10061-01-5		ND	1.
10061-02-6		ND	ī.
100-41-4	ETHYLBENZENE	ND	ī.
106-93-4	ETHYLENE DIBROMIDE	ND	ī.
76-13-1	FREON-TF	ND	i.
119-78-6	2-HEXANONE	ND	5.
75-09-2	METHYLENE CHLORIDE	ND	5.
108-10-1	4-METHYL-2-PENTANONE (MIBK)	ND	5.
100-42-5	STYRENE	ND	1.
79-34-5	1,1,2,2-TETRACHLOROETHANE	ND	1.
127-18-4	TETRACHLOROETHYLENE	ND	1.
109-99-9	TETRAHYDROFURAN	ND	5.
108-88-3	TOLUENE	ND	1.
71-55-6	1,1,1-TRICHLOROETHANE	ND	1.
79-00-5	1,1,2-TRICHLOROETHANE	ND	1.
79-01-6	TRICHLOROETHYLENE	5.	1.
75-69-4	TRICHLOROFLUOROMETHANE	ND	1.
108-05-4	VINYL ACETATE	ND	5.
75-01-4	VINYL CHLORIDE	ND	5.
95-47-6	TOTAL XYLENES	ND	1.
· ·	TOTAL VIDENES	מא	1.

CLIENT:

WOODWARD-CLYDE

SAMPLE: WCC-2S-1A

VOA

WCAS JOB #: 13191

UNITS: UG/L (PPB)

APPROXIMATE

COMPOUND NAME

FRACTION CONCENTRATION

1 NONE FOUND

CLIENT: WOODWARD-CLYDE SAMPLE: WCC-3S-1A

WCAS JOB #: 13191

DATE RECEIVED: 07/13/89 RUN NUMBER: 13191V50
DATE EXTRACTED: 07/25/89 SAMPLE AMOUNT: 10UL
DATE ANALYZED: 07/25/89 MATRIX: WATER

CAS #	COMPOUND	CONCENTRATION	DET LIMIT
==========		=======================================	========
67-64-1	ACETONE	ND	3000.
71-43-2	BENZENE	ND	500.
75-27-4	BROMODICHLOROMETHANE	ND	500.
75-25-2	BROMOFORM	ND	500.
74-83-9	BROMOMETHANE	ND	3000.
78-93-3	2-BUTANONE (MEK)	ND	3000.
75-15-0	CARBON DISULFIDE	ИD	500.
56-23-5	CARBON TETRACHLORIDE	ND	500.
108-90-7	CHLOROBENZENE	ND	500.
75-00-3	CHLOROETHANE	ND	3000.
110-75-8	2-CHLOROETHYLVINYLETHER	ND	5000.
67-66-3	CHLOROFORM	ND	500.
74-87-3	CHLOROMETHANE	ND	3000.
108-41-8	CHLOROTOLUENE	ND	500.
124-48-1	DIBROMOCHLOROMETHANE	ND	500.
95-50-1	1,2-DICHLOROBENZENE	ND	500.
541-73-1	1,3-DICHLOROBENZENE	ND	500.
106-46-7	1,4-DICHLOROBENZENE	ND	500.
75-34-3	1,1-DICHLOROETHANE	ND	500.
107-06-2	1,2-DICHLOROETHANE	ND	500.
75-35-4	1,1-DICHLOROETHYLENE	18000.	500.
156-59-4	CIS-1,2-DICHLOROETHYLENE	ND	500.
156-60-5	TRANS-1,2-DICHLOROETHYLENE	660.	500.
78-87-5	1,2-DICHLOROPROPANE	ND	500.
10061-01-5	CIS-1,3-DICHLOROPROPENE	ND	500.
10061-02-6	TRANS-1,3-DICHLOROPROPENE	ND	500.
100-41-4	ETHYLBENZENE	ND	500.
106-93-4	ETHYLENE DIBROMIDE	ND	500.
76-13-1	FREON-TF	ND	500.
119-78-6	2-HEXANONE	ND	3000.
75-09-2	METHYLENE CHLORIDE	ND	3000.
108-10-1	4-METHYL-2-PENTANONE (MIBK)	ND	3000.
100-42-5	STYRENE	ND	500.
79-34-5	1,1,2,2-TETRACHLOROETHANE	ND	500.
127-18-4	TETRACHLOROETHYLENE	ND	500.
109-99-9	TETRAHYDROFURAN	ND	3000.
108-88-3	TOLUENE	32000.	500.
71-55-6	1,1,1-TRICHLOROETHANE	56000.	500.
79-00-5	1,1,2-TRICHLOROETHANE	550.	500.
79-00-5	TRICHLOROETHYLENE	7700.	500.
75-69-4			500.
	TRICHLOROFLUOROMETHANE	ND	
108-05-4	VINYL ACETATE	ND	3000.
75-01-4	VINYL CHLORIDE	ND	3000.
95-47-6	TOTAL XYLENES	ND	500.

CLIENT: WOODWARD-CLYDE

SAMPLE: WCC-3S-1A

WCAS JOB #: 13191

UNITS: UG/L (PPB)

APPROXIMATE

COMPOUND NAME

FRACTION CONCENTRATION

1 NONE FOUND

CLIENT: WOODWARD-CLYDE SAMPLE: WCC-4S-1A

WCAS JOB #: 13191

DATE RECEIVED: 07/13/89 RUN NUMBER: 13191V60
DATE EXTRACTED: 07/25/89 SAMPLE AMOUNT: 2ML
DATE ANALYZED: 07/25/89 MATRIX: WATER

VOLATILE ORGANICS (EPA 624/8240) UNITS: UG/L (PPB)

CAS #	COMPOUND	CONCENTRATION	
=======================================	=======================================		
67-61-1	ACETONE	ND	20.
67-64-1	BENZENE	ND	3.
71-43-2 75-27-4		ND	3.
		ND	3.
75-25-2		ND	20.
74-83-9		ND	20.
78-93-3	· · · · · · · · · · · · · · · · · · ·	ND	3.
75-15-0		ND	3.
56-23-5		ND	3.
108-90-7		ND	20.
75-00-3	CHLOROETHANE	ND	30.
110-75-8	2-CHLOROETHYLVINYLETHER	ND	3.
67-66-3	CHLOROFORM		20.
74-87-3	CHLOROMETHANE	ND	3.
108-41-8	CHLOROTOLUENE	ND	3.
124-48-1	DIBROMOCHLOROMETHANE	ND	
95-50-1	1,2-DICHLOROBENZENE	ND	3.
541-73-1	1,3-DICHLOROBENZENE	ND	3.
	1,4-DICHLOROBENZENE	ND	3.
75-34-3	1,1-DICHLOROETHANE	ND	3.
107-06-2		ND	3.
75-35-4	1,1-DICHLOROETHYLENE	170.	3.
156-59-4	CIS-1,2-DICHLOROETHYLENE	10.	3.
156-60-5	TRANS-1,2-DICHLOROETHYLENE	ND	3.
78-87-5	1,2-DICHLOROPROPANE	ND	3.
10061-01-5	CIS-1,3-DICHLOROPROPENE	ND	3.
10061-02-6	TRANS-1,3-DICHLOROPROPENE	ND	3.
100-41-4	ETHYLBENZENE	ND	3.
106-93-4	ETHYLENE DIBROMIDE	ND	3.
76-13-1	FREON-TF	ND	3.
119-78-6	2-HEXANONE	ND	20.
75-09-2	METHYLENE CHLORIDE	ND	20.
108-10-1	4-METHYL-2-PENTANONE (MIBK)	ND	20.
100-42-5		ND	3.
79-34-5	1,1,2,2-TETRACHLOROETHANE	ND	3.
127-18-4	TETRACHLOROETHYLENE	ND	3.
109-99-9	TETRAHYDROFURAN	ND	20.
108-88-3	TOLUENE	ND	3.
71-55-6	1,1,1-TRICHLOROETHANE	11.	3.
79-00-5	1,1,2-TRICHLOROETHANE	ND	3.
79-01-6	TRICHLOROETHYLENE	270.	3.
75-69-4	TRICHLOROFLUOROMETHANE	ND ND	3.
108-05-4	VINYL ACETATE	ND	20.
75-01-4	VINIL ACEIATE VINYL CHLORIDE	ND	20.
95-47-6		ND	3.
35-4/ -0	TOTAL XYLENES	ND	٠.

CLIENT: WOODWARD-CLYDE

SAMPLE: WCC-4S-1A

WCAS JOB #: 13191

UNITS: UG/L (PPB)

APPROXIMATE

COMPOUND NAME

FRACTION CONCENTRATION

1 NONE FOUND

CLIENT: WOODWARD-CLYDE SAMPLE: WCC-5S-1A

WCAS JOB #: 13191

DATE RECEIVED: 07/13/89 RUN NUMBER: 13191V51

DATE EXTRACTED: 07/25/89

DATE ANALYZED: 07/25/89

SAMPLE AMOUNT: 5ML
MATRIX: WATER

CAS #	COMPOUND	CONCENTRATION	
67-64-1	ACETONE	ND	5.
71-43-2	BENZENE	ND	1.
75-27-4	BROMODICHLOROMETHANE	ND	1.
75-25-2	BROMOFORM	ND	1.
74-83-9	BROMOMETHANE	ND	5.
78-93-3	2-BUTANONE (MEK)	ND	5.
75-15-0	CARBON DISULFIDE	ND	1.
56-23-5	CARBON TETRACHLORIDE	ND	1.
108-90-7	CHLOROBENZENE	ND	1.
75-00-3	CHLOROETHANE	ND	5.
110-75-8	2-CHLOROETHYLVINYLETHER	ND	10.
67 - 66-3	CHLOROFORM	ND	1.
74-87-3	CHLOROMETHANE	ND	5.
108-41-8	CHLOROTOLUENE	ND	1.
124-48-1	DIBROMOCHLOROMETHANE	ND	1.
95-50-1	1,2-DICHLOROBENZENE	ND	1.
541-73-1	1,3-DICHLOROBENZENE	ND	1.
106-46-7	1,4-DICHLOROBENZENE	ND	1.
75-34-3	1,1-DICHLOROETHANE	ND	1.
107-06-2	1,2-DICHLOROETHANE	ND	1.
75-35-4	1,1-DICHLOROETHYLENE	3.	1.
156-59-4	CIS-1,2-DICHLOROETHYLENE	6.	1.
156-60-5	TRANS-1,2-DICHLOROETHYLENE	ND	1.
78-87-5	1,2-DICHLOROPROPANE	ND	1.
10061-01-5		ND	1.
10061-02-6	TRANS-1,3-DICHLOROPROPENE	ND	1.
100-41-4	ETHYLBENZENE	ND	1.
106-93-4	ETHYLENE DIBROMIDE	ND	1.
76-13-1	FREON-TF	ND	1.
119-78-6	2-HEXANONE	ND	5.
75-09-2	METHYLENE CHLORIDE	ND	5.
108-10-1	4-METHYL-2-PENTANONE (MIBK)	ND	5.
100-42-5	STYRENE	ND	1.
79-34-5	1,1,2,2-TETRACHLOROETHANE	ND	1.
127-18-4	TETRACHLOROETHYLENE	ND	1.
109-99-9	TETRAHYDROFURAN	ND	5.
108-88-3	TOLUENE	ND	1.
71-55-6	1,1,1-TRICHLOROETHANE	ND	1.
79-00-5	1,1,2-TRICHLOROETHANE	ND	1.
79-01-6	TRICHLOROETHYLENE	13.	1.
75-69-4	TRICHLOROFLUOROMETHANE	ND	1.
108-05-4	VINYL ACETATE	ND	5.
75-01-4	VINYL CHLORIDE	ND	5.
95-47-6	TOTAL XYLENES	ND	1.

CLIENT: WOODWARD-CLYDE WCAS JOB #: 13191

SAMPLE: WCC-5S-1A

UNITS: UG/L (PPB)

APPROXIMATE

COMPOUND NAME

FRACTION CONCENTRATION

1 NONE FOUND

CLIENT: WOODWARD-CLYDE SAMPLE: WCC-5S-1B

WCAS JOB #: 13191

DATE RECEIVED: 07/13/89 RUN NUMBER: 13191V52
DATE EXTRACTED: 07/25/89 SAMPLE AMOUNT: 5ML
DATE ANALYZED: 07/25/89 MATRIX: WATER

CAS #	COMPOUND	CONCENTRATION	
67-64-1	ACETONE	ND	5.
71-43-2	BENZENE	ND	1.
75-27-4	BROMODICHLOROMETHANE	ND	1.
75-25-2	BROMOFORM	ND	1.
74-83-9	BROMOMETHANE	ND	5.
78-93-3	2-BUTANONE (MEK)	ND	5.
75-15-0	CARBON DISULFIDE	ND	1.
56-23-5	CARBON TETRACHLORIDE	ND	1.
108-90-7	CHLOROBENZENE	ND	1.
75-00-3	CHLOROETHANE	ND	5.
110-75-8	2-CHLOROETHYLVINYLETHER	ND	10.
67-66-3	CHLOROFORM	ND	1.
74-87-3	CHLOROMETHANE	ND	5.
108-41-8	CHLOROTOLUENE	ND	1.
124-48-1	DIBROMOCHLOROMETHANE	ND	1.
95-50-1	1,2-DICHLOROBENZENE	ND	1.
541-73-1	1,3-DICHLOROBENZENE	ND	1.
106-46-7	1,4-DICHLOROBENZENE	ND	1.
75-34-3	1,1-DICHLOROETHANE	ND	1.
107-06-2	1,2-DICHLOROETHANE	ND	1.
75-35-4	1,1-DICHLOROETHYLENE	3.	1.
156-59-4	CIS-1,2-DICHLOROETHYLENE	6.	1.
156-60-5	TRANS-1,2-DICHLOROETHYLENE	ND	1.
78-87-5	1,2-DICHLOROPROPANE	ND	1.
10061-01-5		ЙD	1.
10061-02-6	•	ND	1.
100-41-4	ETHYLBENZENE	ND	1.
106-93-4	ETHYLENE DIBROMIDE	ND	1.
76-13-1	FREON-TF	ND	1.
119-78-6	2-HEXANONE	ND	5.
75-09-2	METHYLENE CHLORIDE	ND	5.
108-10-1	4-METHYL-2-PENTANONE (MIBK)	ND	5.
100-42-5	STYRENE	ND	1.
79-34-5	1,1,2,2-TETRACHLOROETHANE	ND	1.
127-18-4	TETRACHLOROETHYLENE	ND	1.
109-99-9	TETRAHYDROFURAN	ND	5.
108-88-3	TOLUENE	ND	1.
71-55-6	1,1,1-TRICHLOROETHANE	ND	1.
79-00-5	1,1,2-TRICHLOROETHANE	ND	1.
79-01-6	TRICHLOROETHYLENE	12.	1.
75-69-4	TRICHLOROFLUOROMETHANE	ND	ī.
108-05-4	VINYL ACETATE	ND	5.
75-01-4	VINYL CHLORIDE	ND	5.
95-47-6	TOTAL XYLENES	ND	1.
· -	- : : - : : : : : : : : :		

CLIENT:

WOODWARD-CLYDE

SAMPLE: WCC-5S-1B

VOA

WCAS JOB #: 13191

UNITS: UG/L (PPB)

APPROXIMATE

COMPOUND NAME

FRACTION CONCENTRATION

1 NONE FOUND

CLIENT: WOODWARD-CLYDE SAMPLE: WCC-7S-1A

WCAS JOB #: 13191

DATE RECEIVED: 07/13/89 RUN NUMBER: 13191V61
DATE EXTRACTED: 07/25/89 SAMPLE AMOUNT: 500UL
DATE ANALYZED: 07/25/89 MATRIX: WATER

CAS #	COMPOUND	CONCENTRATION	DET LIMIT
			========
67-64-1	ACETONE	ND	50
71-43-2	BENZENE	ND	50.
75-27-4	BROMODICHLOROMETHANE	ND	10.
75-25-2	BROMOFORM	ND	10.
74-83-9	BROMOMETHANE	ND	10.
78-93-3	2-BUTANONE (MEK)	ND	50.
75-15-0	CARBON DISULFIDE	ND	50.
56-23-5	CARBON TETRACHLORIDE	ND	10.
108-90-7	CHLOROBENZENE	ND	10.
75-00-3	CHLOROETHANE	ND	10.
110-75-8	2-CHLOROETHYLVINYLETHER	ND	50.
67-66-3	CHLOROFORM	ND	100.
74-87-3	CHLOROMETHANE	ND	10.
108-41-8	CHLOROTOLUENE	ND	50.
124-48-1	DIBROMOCHLOROMETHANE	ND	10.
95-50-1		ND	10.
541-73-1	1,2-DICHLOROBENZENE	ND	10.
106-46-7	1,3-DICHLOROBENZENE	ND	10.
75-34-3	1,4-DICHLOROBENZENE	ND	10.
107-06-2	1,1-DICHLOROETHANE	ND	10.
75-35-4	1,2-DICHLOROETHANE	ND	10.
	1,1-DICHLOROETHYLENE	850.	10.
156-59-4	CIS-1,2-DICHLOROETHYLENE	26.	10.
156-60-5	TRANS-1,2-DICHLOROETHYLENE	11.	10.
78-87-5	1,2-DICHLOROPROPANE	ND	10.
10061-01-5	CIS-1,3-DICHLOROPROPENE	ND	10.
10061-02-6	TRANS-1,3-DICHLOROPROPENE	ND	10.
100-41-4	ETHYLBENZENE	ND	10.
106-93-4	ETHYLENE DIBROMIDE	ND	10.
76-13-1	FREON-TF	ND	10.
119-78-6	2-HEXANONE	ND	50.
75-09-2	METHYLENE CHLORIDE	ND	50.
108-10-1	4-METHYL-2-PENTANONE (MIBK)	ND	50.
100-42-5	STYRENE	ND	10.
79-34-5	1,1,2,2-TETRACHLOROETHANE	ND	10.
127-18-4	TETRACHLOROETHYLENE	ND	10.
109-99-9	TETRAHYDROFURAN	ND	50.
108-88-3	TOLUENE	ND	10.
71-55-6	1,1,1-TRICHLOROETHANE	110.	10.
79-00-5	1,1,2-TRICHLOROETHANE	ND	10.
79-01-6	TRICHLOROETHYLENE	1300.	10.
75-69-4	TRICHLOROFLUOROMETHANE	ND	10.
108-05-4	VINYL ACETATE	ND	50.
75-01-4	VINYL CHLORIDE	ND	50.
95-47-6	TOTAL XYLENES	ND	
· -		ND	10.

CLIENT: WOODWARD-CLYDE WCAS JOB #: 13191

SAMPLE: WCC-7S-1A

UNITS: UG/L (PPB)

COMPOUND NAME

APPROXIMATE FRACTION CONCENTRATION

1 NONE FOUND

CLIENT: WOODWARD-CLYDE SAMPLE: WCC-8S-1A

WCAS JOB #: 13191

DATE RECEIVED: 07/13/89 RUN NUMBER: 13191V58
DATE EXTRACTED: 07/25/89 SAMPLE AMOUNT: 1ML

DATE ANALYZED: 07/25/89 MATRIX: WATER

CAS #	COMPOUND	CONCENTRATION	DET LIMIT
2522222222			
67-64-1	ACETONE	ND	30.
71-43-2	BENZENE	ND	5.
75-27-4	BROMODICHLOROMETHANE	ND	5.
75-25-2	BROMOFORM	ND	5.
74-83-9	BROMOMETHANE	ND	30.
78-93-3	2-BUTANONE (MEK)	ND	30.
75-15-0	CARBON DISULFIDE	ND	5.
56-23-5	CARBON TETRACHLORIDE	ND	5.
108-90-7	CHLOROBENZENE	ND	5.
75-00-3	CHLOROETHANE	ND	30.
110-75-8	2-CHLOROETHYLVINYLETHER	ND	50.
67-66-3	CHLOROFORM	ND	5.
74-87-3	CHLOROMETHANE	ND	30.
108-41-8	CHLOROTOLUENE	ND	5.
124-48-1	DIBROMOCHLOROMETHANE	ND	5.
95-50-1	1,2-DICHLOROBENZENE	ND	5.
541-73-1	1,3-DICHLOROBENZENE	ND	5.
106-46-7	1,4-DICHLOROBENZENE	ND	5.
75-34-3	1,1-DICHLOROETHANE	ND	5.
107-06-2	1,2-DICHLOROETHANE	ND	5.
75-35-4	1,1-DICHLOROETHYLENE	430.	5.
156-59-4	CIS-1,2-DICHLOROETHYLENE	7.	5.
156-60-5	TRANS-1,2-DICHLOROETHYLENE	9.	5.
78-87-5	1,2-DICHLOROPROPANE	ND	5.
10061-01-5	CIS-1,3-DICHLOROPROPENE	ND	5.
10061-02-6	TRANS-1,3-DICHLOROPROPENE	ND	5.
100-41-4	ETHYLBENZENE	ND	5.
106-93-4	ETHYLENE DIBROMIDE	ND	5.
76-13-1	FREON-TF	ND	5.
119-78-6	2-HEXANONE	ND	30.
75-09-2	METHYLENE CHLORIDE	ND	30.
108-10-1	4-METHYL-2-PENTANONE (MIBK)	ND	30.
100-42-5	STYRENE	ND	5.
79-34-5	1,1,2,2-TETRACHLOROETHANE	ND	5.
127-18-4	TETRACHLOROETHYLENE	ND	5.
109-99-9	TETRAHYDROFURAN	ND	30.
108-88-3	TOLUENE	ND	5.
71-55-6	1,1,1-TRICHLOROETHANE	160.	5.
79-00-5	1,1,2-TRICHLOROETHANE	ND	5.
79-01-6	TRICHLOROETHYLENE	240.	5.
75-69-4	TRICHLOROFLUOROMETHANE	ND	5.
108-05-4	VINYL ACETATE	ND	30.
75-01-4	VINYL CHLORIDE	ND	30.
95-47-6	TOTAL XYLENES	ND	5.
•		112	٠.

CLIENT: WOODWARD-CLYDE WCAS JOB #: 13191

SAMPLE: WCC-8S-1A

UNITS: UG/L (PPB)

APPROXIMATE

COMPOUND NAME

FRACTION CONCENTRATION

1 NONE FOUND

CLIENT: WOODWARD-CLYDE SAMPLE: WCC-8S-1R

WCAS JOB #: 13191

DATE RECEIVED: 07/13/89 RUN NUMBER: 13191V54
DATE EXTRACTED: 07/25/89 SAMPLE AMOUNT: 5ML
DATE ANALYZED: 07/25/89 MATRIX: WATER

CAS				
ACETONE	CAS #	COMPOUND	CONCENTRATION	DET LIMIT
71-43-2 BENZENE	=========		================	
71-43-2 BENZENE				
75-27-4 BROMODICHLOROMETHANE ND 1. 75-25-2 BROMOFORM ND 1. 74-83-9 BROMOMETHANE ND 5. 78-93-3 2-BUTANONE (MEK) ND 5. 75-15-0 CARBON DISULFIDE ND 1. 56-23-5 CARBON TETRACHLORIDE ND 1. 108-90-7 CHLOROBENZENE ND 1. 75-00-3 CHLOROETHYLVINYLETHER ND 1. 110-75-8 2-CHLOROETHYLVINYLETHER ND 10. 4-87-3 CHLOROFORM ND 1. 4-87-3 CHLOROFORM ND 1. 108-41-8 CHLOROTOLUENE ND 1. 108-41-8 CHLOROTOLUENE ND 1. 108-41-8 CHLOROTOLUENE ND 1. 108-41-8 CHLOROTOLUENE ND 1. 108-41-73-1 1,3-DICHLOROBENZENE ND 1. 108-41-73-1 1,3-DICHLOROBENZENE ND 1. 106-646-7	67-64-1	ACETONE	ND	5.
75-25-2 BROMOFORM ND 1. 74-83-9 BROMOMETHANE ND 5. 78-93-3 2-BUTANONE (MEK) ND 5. 75-15-0 CARBON DISULFIDE ND 1. 56-23-5 CARBON TETRACHLORIDE ND 1. 108-90-7 CHLOROBENZENE ND 1. 75-00-3 CHLOROFETHANE ND 5. 110-75-8 2-CHLOROFORM ND 1. 67-66-3 CHLOROFORM ND 1. 74-87-3 CHLOROFORM ND 1. 108-41-8 CHLOROTOLUENE ND 1. 108-41-8 CHLOROFORMETHANE ND 1. 108-41-8 CHLOROBENZENE ND 1. 55-50-1 1,2-DICHLOROBENZENE ND 1. 541-73-1 1,3-DICHLOROBENZENE ND 1. 541-73-1 1,3-DICHLOROBENZENE ND 1. 107-6-62 1,2-DICHLOROETHANE ND 1. 107-6-534-3 1,1-	71-43-2	BENZENE	ND	1.
74-83-9 BROMOMETHANE ND 5. 78-93-3 2-BUTANONE (MEK) ND 5. 75-15-0 CARBON DISULFIDE ND 1. 56-23-5 CARBON DISULFIDE ND 1. 108-90-7 CHLOROENZENE ND 1. 75-00-3 CHLOROETHANE ND 5. 110-75-8 2-CHLOROETHYLVINYLETHER ND 10. 67-66-3 CHLOROFORM ND 1. 74-87-3 CHLOROETHANE ND 1. 108-41-8 CHLOROTOLUENE ND 1. 124-48-1 DIBROMOCHLOROMETHANE ND 1. 95-50-1 1,2-DICHLOROBENZENE ND 1. 106-46-7 1,4-DICHLOROBENZENE ND 1. 106-46-7 1,4-DICHLOROETHANE ND 1. 175-34-3 1,1-DICHLOROETHANE ND 1. 106-60-5 1,2-DICHLOROETHYLENE ND 1. 156-59-4 CIS-1,2-DICHLOROETHYLENE ND 1. <td< td=""><td>75-27-4</td><td>BROMODICHLOROMETHANE</td><td>ND</td><td>1.</td></td<>	75-27-4	BROMODICHLOROMETHANE	ND	1.
74-83-9 BROMOMETHANE ND 5. 78-93-3 2-BUTANONE (MEK) ND 5. 75-15-0 CARBON DISULFIDE ND 1. 56-23-5 CARBON DISULFIDE ND 1. 108-90-7 CHLOROENZENE ND 1. 75-00-3 CHLOROETHANE ND 5. 110-75-8 2-CHLOROETHYLVINYLETHER ND 10. 67-66-3 CHLOROFORM ND 1. 74-87-3 CHLOROETHANE ND 1. 108-41-8 CHLOROTOLUENE ND 1. 124-48-1 DIBROMOCHLOROMETHANE ND 1. 95-50-1 1,2-DICHLOROBENZENE ND 1. 106-46-7 1,4-DICHLOROBENZENE ND 1. 106-46-7 1,4-DICHLOROETHANE ND 1. 175-34-3 1,1-DICHLOROETHANE ND 1. 106-60-5 1,2-DICHLOROETHYLENE ND 1. 156-59-4 CIS-1,2-DICHLOROETHYLENE ND 1. <td< td=""><td>75-25-2</td><td>BROMOFORM</td><td>ND</td><td>1.</td></td<>	75-25-2	BROMOFORM	ND	1.
78-93-3 2-BUTANONE (MEK) ND 5. 75-15-0 CARBON DISULFIDE ND 1. 56-23-5 CARBON TETRACHLORIDE ND 1. 108-90-7 CHLOROBENZENE ND 1. 75-00-3 CHLOROETHANE ND 5. 110-75-8 2-CHLOROETHYLIVIVLETHER ND 10. 67-66-3 CHLOROFORM ND 1. 74-87-3 CHLOROMETHANE ND 1. 108-41-8 CHLOROTUENE ND 1. 108-41-8 CHLOROTUENE ND 1. 124-48-1 DIBROMOCHLOROMETHANE ND 1. 124-48-1 DIBROMOCHLOROMETHANE ND 1. 541-73-1 1,3-DICHLOROBENZENE ND 1. 541-73-1 1,2-DICHLOROBENZENE ND 1. 106-46-7 1,4-DICHLOROBENZENE ND 1. 107-06-2 1,2-DICHLOROBENZENE ND 1. 107-06-2 1,2-DICHLOROBENZENE ND 1. <			ND	5.
75-15-0 CARBON DISULFIDE				
56-23-5 CARBON TETRACHLORIDE ND 1. 108-90-7 CHLOROBENZENE ND 5. 75-00-3 CHLOROETHANE ND 5. 110-75-8 2-CHLOROFTHYLVINYLETHER ND 10. 67-66-3 CHLOROFORM ND 1. 74-87-3 CHLOROTOLUENE ND 5. 108-41-8 CHLOROTOLUENE ND 1. 124-48-1 DIBROMOCHLOROMETHANE ND 1. 95-50-1 1,2-DICHLOROBENZENE ND 1. 541-73-1 1,3-DICHLOROBENZENE ND 1. 106-46-7 1,4-DICHLOROBENZENE ND 1. 107-06-2 1,2-DICHLOROETHANE ND 1. 107-06-2 1,2-DICHLOROETHYLENE ND 1. 156-59-4 CIS-1,2-DICHLOROETHYLENE ND 1. 156-69-5 TRANS-1,2-DICHLOROETHYLENE ND 1. 106-10-2-6 TRANS-1,3-DICHLOROPROPENE ND 1. 100-41-4 ETHYLENE ND 1.		•		
108-90-7				
T5-00-3				
110-75-8 2-CHLOROETHYLVINYLETHER				=
67-66-3 CHLOROFORM ND 1. 74-87-3 CHLOROMETHANE ND 5. 108-41-8 CHLOROTOLUENE ND 1. 124-48-1 DIBROMOCHLOROMETHANE ND 1. 95-50-1 1,2-DICHLOROBENZENE ND 1. 541-73-1 1,3-DICHLOROBENZENE ND 1. 106-46-7 1,4-DICHLOROBENZENE ND 1. 75-34-3 1,1-DICHLOROETHANE ND 1. 107-06-2 1,2-DICHLOROETHYLENE ND 1. 156-59-4 CIS-1,2-DICHLOROETHYLENE ND 1. 156-60-5 TRANS-1,2-DICHLOROETHYLENE ND 1. 106-05-1 TRANS-1,2-DICHLOROPROPENE ND 1. 10061-01-5 CIS-1,3-DICHLOROPROPENE ND 1. 10061-02-6 TRANS-1,3-DICHLOROPROPENE ND 1. 100-93-4 ETHYLENE DIBROMIDE ND 1. 119-78-6 2-HEXANONE ND 1. 75-09-2 METHYLENE CHLORIDE ND 5. 108-10-1 4-METHYLENE CHLOROETHANE ND <td< td=""><td></td><td></td><td></td><td></td></td<>				
74-87-3 CHLOROMETHANE ND 5. 108-41-8 CHLOROTOLUENE ND 1. 124-48-1 DIBROMOCHLOROMETHANE ND 1. 95-50-1 1,2-DICHLOROBENZENE ND 1. 541-73-1 1,3-DICHLOROBENZENE ND 1. 106-46-7 1,4-DICHLOROETHANE ND 1. 107-06-2 1,2-DICHLOROETHANE ND 1. 107-06-2 1,2-DICHLOROETHYLENE ND 1. 156-59-4 CIS-1,2-DICHLOROETHYLENE ND 1. 156-60-5 TRANS-1,2-DICHLOROETHYLENE ND 1. 178-87-5 1,2-DICHLOROFROPANE ND 1. 10061-01-5 CIS-1,3-DICHLOROFROPENE ND 1. 100-40-6 TRANS-1,3-DICHLOROFROPENE ND 1. 106-93-4 ETHYLBENZENE ND 1. 75-09-2 METHYLENE CHLORIDE ND 1. 108-10-1 FREON-TF ND 5. 108-10-1 FREON-TF ND 5.				
108-41-8 CHLOROTOLUENE ND 1. 124-48-1 DIBROMOCHLOROMETHANE ND 1. 95-50-1 1,2-DICHLOROBENZENE ND 1. 541-73-1 1,3-DICHLOROBENZENE ND 1. 106-46-7 1,4-DICHLOROBENZENE ND 1. 107-06-2 1,2-DICHLOROETHANE ND 1. 107-06-2 1,2-DICHLOROETHYLENE ND 1. 156-59-4 CIS-1,2-DICHLOROETHYLENE ND 1. 156-60-5 TRANS-1,2-DICHLOROETHYLENE ND 1. 1066-00-5 TRANS-1,2-DICHLOROETHYLENE ND 1. 10061-01-5 CIS-1,3-DICHLOROPROPENE ND 1. 10061-02-6 TRANS-1,3-DICHLOROPROPENE ND 1. 100-41-4 ETHYLENE DIBROMIDE ND 1. 100-43-4 ETHYLENE DIBROMIDE ND 1. 75-09-2 METHYLENE CHLORIDE ND 5. 108-10-1 4-METHYL-2-PENTANONE (MIBK) ND 5. 108-10-1 4-METHYLENE C				
124-48-1 DIBROMOCHLOROMETHANE ND 1. 95-50-1 1,2-DICHLOROBENZENE ND 1. 541-73-1 1,3-DICHLOROBENZENE ND 1. 106-46-7 1,4-DICHLOROETHANE ND 1. 75-34-3 1,1-DICHLOROETHANE ND 1. 107-06-2 1,2-DICHLOROETHYLENE ND 1. 75-35-4 1,1-DICHLOROETHYLENE ND 1. 156-59-4 CIS-1,2-DICHLOROETHYLENE ND 1. 156-60-5 TRANS-1,2-DICHLOROETHYLENE ND 1. 156-60-5 TRANS-1,2-DICHLOROETHYLENE ND 1. 10061-01-5 CIS-1,3-DICHLOROPROPENE ND 1. 10061-02-6 TRANS-1,3-DICHLOROPROPENE ND 1. 100-41-4 ETHYLENE DIBROMIDE ND 1. 106-93-4 ETHYLENE DIBROMIDE ND 1. 176-13-1 FREON-TF ND 1. 119-78-6 2-HEXANONE ND 5. 75-09-2 METHYLENE CHLORIDE ND 5. 108-10-1 4-METHYLE-2-PENTANONE (MIBK) ND				
95-50-1 1,2-DICHLOROBENZENE ND 1. 541-73-1 1,3-DICHLOROBENZENE ND 1. 106-46-7 1,4-DICHLOROBENZENE ND 1. 75-34-3 1,1-DICHLOROETHANE ND 1. 107-06-2 1,2-DICHLOROETHYLENE ND 1. 75-35-4 1,1-DICHLOROETHYLENE ND 1. 156-59-4 CIS-1,2-DICHLOROETHYLENE ND 1. 156-60-5 TRANS-1,2-DICHLOROETHYLENE ND 1. 78-87-5 1,2-DICHLOROPROPANE ND 1. 10061-01-5 CIS-1,3-DICHLOROPROPENE ND 1. 10061-02-6 TRANS-1,3-DICHLOROPROPENE ND 1. 100-41-4 ETHYLENE DIBROMIDE ND 1. 106-93-4 ETHYLENE DIBROMIDE ND 1. 76-13-1 FREON-TF ND 1. 119-78-6 2-HEXANONE ND 5. 75-09-2 METHYLENE CHLORIDE ND 5. 100-42-5 STYRENE ND 1. 109-99-9 TETRAHYDROFURAN ND 1.				
541-73-1 1,3-DICHLOROBENZENE ND 1. 106-46-7 1,4-DICHLOROBENZENE ND 1. 75-34-3 1,1-DICHLOROETHANE ND 1. 107-06-2 1,2-DICHLOROETHANE ND 1. 75-35-4 1,1-DICHLOROETHYLENE ND 1. 156-59-4 CIS-1,2-DICHLOROETHYLENE ND 1. 156-60-5 TRANS-1,2-DICHLOROETHYLENE ND 1. 106-60-5 TRANS-1,3-DICHLOROPROPENE ND 1. 10061-01-5 CIS-1,3-DICHLOROPROPENE ND 1. 10061-02-6 TRANS-1,3-DICHLOROPROPENE ND 1. 100-41-4 ETHYLBENZENE ND 1. 106-93-4 ETHYLENE DIBROMIDE ND 1. 106-93-4 ETHYLENE DIBROMIDE ND 1. 75-09-2 METHYLENE CHLORIDE ND 5. 108-10-1 4-METHYL-2-PENTANONE (MIBK) ND 5. 100-42-5 STYRENE ND 1. 79-34-5 1,1,2,2-TETRACHLOROETHANE ND 1. 108-88-3 TOLUENE ND				
106-46-7 1,4-DICHLOROBENZENE ND 1. 75-34-3 1,1-DICHLOROETHANE ND 1. 107-06-2 1,2-DICHLOROETHANE ND 1. 75-35-4 1,1-DICHLOROETHYLENE ND 1. 156-59-4 CIS-1,2-DICHLOROETHYLENE ND 1. 156-60-5 TRANS-1,2-DICHLOROETHYLENE ND 1. 78-87-5 1,2-DICHLOROPROPANE ND 1. 10061-01-5 CIS-1,3-DICHLOROPROPENE ND 1. 10061-02-6 TRANS-1,3-DICHLOROPROPENE ND 1. 100-41-4 ETHYLBENZENE ND 1. 106-93-4 ETHYLENE DIBROMIDE ND 1. 76-13-1 FREON-TF ND 1. 119-78-6 2-HEXANONE ND 5. 75-09-2 METHYLENE CHLORIDE ND 5. 108-10-1 4-METHYL-2-PENTANONE (MIBK) ND 5. 100-42-5 STYRENE ND 1. 79-34-5 1,1,2,2-TETRACHLOROETHANE ND 1. 109-99-9 TETRAHYDROFURAN ND 1.				
75-34-3 1,1-DICHLOROETHANE ND 1. 107-06-2 1,2-DICHLOROETHANE ND 1. 75-35-4 1,1-DICHLOROETHYLENE ND 1. 156-59-4 CIS-1,2-DICHLOROETHYLENE ND 1. 156-60-5 TRANS-1,2-DICHLOROETHYLENE ND 1. 106-60-5 TRANS-1,3-DICHLOROPROPANE ND 1. 10061-01-5 CIS-1,3-DICHLOROPROPENE ND 1. 10061-02-6 TRANS-1,3-DICHLOROPROPENE ND 1. 100-41-4 ETHYLENE DIBROMIDE ND 1. 106-93-4 ETHYLENE DIBROMIDE ND 1. 76-13-1 FREON-TF ND 1. 119-78-6 2-HEXANONE ND 5. 75-09-2 METHYLENE CHLORIDE ND 5. 108-10-1 4-METHYL-2-PENTANONE (MIBK) ND 5. 100-42-5 STYRENE ND 1. 79-34-5 1,1,2,2-TETRACHLOROETHANE ND 1. 109-99-9 TETRAHYDROFURAN ND 5. 108-88-3 TOLUENE ND 1.				
107-06-2 1,2-DICHLOROETHANE ND 1. 75-35-4 1,1-DICHLOROETHYLENE ND 1. 156-59-4 CIS-1,2-DICHLOROETHYLENE ND 1. 156-60-5 TRANS-1,2-DICHLOROETHYLENE ND 1. 78-87-5 1,2-DICHLOROPROPANE ND 1. 10061-01-5 CIS-1,3-DICHLOROPROPENE ND 1. 10061-02-6 TRANS-1,3-DICHLOROPROPENE ND 1. 100-41-4 ETHYLBENZENE ND 1. 106-93-4 ETHYLENE DIBROMIDE ND 1. 76-13-1 FREON-TF ND 1. 119-78-6 2-HEXANONE ND 5. 75-09-2 METHYLENE CHLORIDE ND 5. 108-10-1 4-METHYL-2-PENTANONE (MIBK) ND 5. 100-42-5 STYRENE ND 1. 79-34-5 1,1,2,2-TETRACHLOROETHANE ND 1. 109-99-9 TETRAHYDROFURAN ND 5. 108-88-3 TOLUENE ND 1. 71-55-6 1,1,1-TRICHLOROETHANE ND 1.				
75-35-4 1,1-DICHLOROETHYLENE ND 1. 156-59-4 CIS-1,2-DICHLOROETHYLENE ND 1. 156-60-5 TRANS-1,2-DICHLOROETHYLENE ND 1. 78-87-5 1,2-DICHLOROPROPANE ND 1. 10061-01-5 CIS-1,3-DICHLOROPROPENE ND 1. 10061-02-6 TRANS-1,3-DICHLOROPROPENE ND 1. 100-41-4 ETHYLENEZENE ND 1. 106-93-4 ETHYLENE DIBROMIDE ND 1. 76-13-1 FREON-TF ND 1. 119-78-6 2-HEXANONE ND 5. 75-09-2 METHYLENE CHLORIDE ND 5. 108-10-1 4-METHYL-2-PENTANONE (MIBK) ND 5. 100-42-5 STYRENE ND 1. 79-34-5 1,1,2,2-TETRACHLOROETHANE ND 1. 109-99-9 TETRACHLOROETHYLENE ND 1. 108-88-3 TOLUENE ND 1. 71-55-6 1,1,1-TRICHLOROETHANE ND 1. 79-00-5 1,1,2-TRICHLOROETHANE ND 1. <td></td> <td></td> <td></td> <td></td>				
156-59-4 CIS-1,2-DICHLOROETHYLENE ND 1. 156-60-5 TRANS-1,2-DICHLOROETHYLENE ND 1. 78-87-5 1,2-DICHLOROPROPANE ND 1. 10061-01-5 CIS-1,3-DICHLOROPROPENE ND 1. 10061-02-6 TRANS-1,3-DICHLOROPROPENE ND 1. 100-41-4 ETHYLBENZENE ND 1. 106-93-4 ETHYLENE DIBROMIDE ND 1. 76-13-1 FREON-TF ND 1. 119-78-6 2-HEXANONE ND 5. 75-09-2 METHYLENE CHLORIDE ND 5. 108-10-1 4-METHYL-2-PENTANONE (MIBK) ND 5. 100-42-5 STYRENE ND 1. 79-34-5 1,1,2,2-TETRACHLOROETHANE ND 1. 109-99-9 TETRACHLOROETHYLENE ND 1. 108-88-3 TOLUENE ND 1. 71-55-6 1,1,1-TRICHLOROETHANE ND 1. 79-00-5 1,1,2-TRICHLOROETHANE ND 1. 79-01-6 TRICHLOROETHYLENE ND 1.				
156-60-5 TRANS-1,2-DICHLOROETHYLENE ND 1. 78-87-5 1,2-DICHLOROPROPANE ND 1. 10061-01-5 CIS-1,3-DICHLOROPROPENE ND 1. 10061-02-6 TRANS-1,3-DICHLOROPROPENE ND 1. 100-41-4 ETHYLENE-1,3-DICHLOROPROPENE ND 1. 106-93-4 ETHYLENE DIBROMIDE ND 1. 76-13-1 FREON-TF ND 1. 119-78-6 2-HEXANONE ND 5. 75-09-2 METHYLENE CHLORIDE ND 5. 108-10-1 4-METHYL-2-PENTANONE (MIBK) ND 5. 100-42-5 STYRENE ND 1. 179-34-5 1,1,2,2-TETRACHLOROETHANE ND 1. 127-18-4 TETRACHLOROETHYLENE ND 1. 108-88-3 TOLUENE ND 1. 79-00-5 1,1,2-TRICHLOROETHANE ND 1. 79-01-6 TRICHLOROETHYLENE ND 1.				
78-87-5 1,2-DICHLOROPROPANE ND 1. 10061-01-5 CIS-1,3-DICHLOROPROPENE ND 1. 10061-02-6 TRANS-1,3-DICHLOROPROPENE ND 1. 100-41-4 ETHYLBENZENE ND 1. 106-93-4 ETHYLENE DIBROMIDE ND 1. 76-13-1 FREON-TF ND 1. 119-78-6 2-HEXANONE ND 5. 75-09-2 METHYLENE CHLORIDE ND 5. 108-10-1 4-METHYL-2-PENTANONE (MIBK) ND 5. 100-42-5 STYRENE ND 1. 79-34-5 1,1,2,2-TETRACHLOROETHANE ND 1. 109-99-9 TETRAHYDROFURAN ND 1. 108-88-3 TOLUENE ND 1. 71-55-6 1,1,1-TRICHLOROETHANE ND 1. 79-00-5 1,1,2-TRICHLOROETHANE ND 1. 79-01-6 TRICHLOROETHYLENE ND 1.		·		
10061-01-5 CIS-1,3-DICHLOROPROPENE ND 1. 10061-02-6 TRANS-1,3-DICHLOROPROPENE ND 1. 100-41-4 ETHYLBENZENE ND 1. 106-93-4 ETHYLENE DIBROMIDE ND 1. 76-13-1 FREON-TF ND 1. 119-78-6 2-HEXANONE ND 5. 75-09-2 METHYLENE CHLORIDE ND 5. 108-10-1 4-METHYL-2-PENTANONE (MIBK) ND 5. 100-42-5 STYRENE ND 1. 79-34-5 1,1,2,2-TETRACHLOROETHANE ND 1. 109-99-9 TETRACHLOROETHYLENE ND 1. 108-88-3 TOLUENE ND 1. 71-55-6 1,1,1-TRICHLOROETHANE ND 1. 79-00-5 1,1,2-TRICHLOROETHANE ND 1. 79-01-6 TRICHLOROETHYLENE ND 1.				
10061-02-6 TRANS-1,3-DICHLOROPROPENE ND 1. 100-41-4 ETHYLBENZENE ND 1. 106-93-4 ETHYLENE DIBROMIDE ND 1. 76-13-1 FREON-TF ND 1. 119-78-6 2-HEXANONE ND 5. 75-09-2 METHYLENE CHLORIDE ND 5. 108-10-1 4-METHYL-2-PENTANONE (MIBK) ND 5. 100-42-5 STYRENE ND 1. 79-34-5 1,1,2,2-TETRACHLOROETHANE ND 1. 109-99-9 TETRAHYDROFURAN ND 1. 108-88-3 TOLUENE ND 1. 71-55-6 1,1,1-TRICHLOROETHANE ND 1. 79-00-5 1,1,2-TRICHLOROETHANE ND 1. 79-01-6 TRICHLOROETHYLENE ND 1.				
100-41-4 ETHYLBENZENE ND 1. 106-93-4 ETHYLENE DIBROMIDE ND 1. 76-13-1 FREON-TF ND 1. 119-78-6 2-HEXANONE ND 5. 75-09-2 METHYLENE CHLORIDE ND 5. 108-10-1 4-METHYL-2-PENTANONE (MIBK) ND 5. 100-42-5 STYRENE ND 1. 79-34-5 1,1,2,2-TETRACHLOROETHANE ND 1. 127-18-4 TETRACHLOROETHYLENE ND 1. 109-99-9 TETRAHYDROFURAN ND 5. 108-88-3 TOLUENE ND 1. 71-55-6 1,1,1-TRICHLOROETHANE ND 1. 79-00-5 1,1,2-TRICHLOROETHANE ND 1. 79-01-6 TRICHLOROETHYLENE ND 1.				
106-93-4 ETHYLENE DIBROMIDE ND 1. 76-13-1 FREON-TF ND 1. 119-78-6 2-HEXANONE ND 5. 75-09-2 METHYLENE CHLORIDE ND 5. 108-10-1 4-METHYL-2-PENTANONE (MIBK) ND 5. 100-42-5 STYRENE ND 1. 79-34-5 1,1,2,2-TETRACHLOROETHANE ND 1. 127-18-4 TETRACHLOROETHYLENE ND 1. 108-88-3 TOLUENE ND 5. 71-55-6 1,1,1-TRICHLOROETHANE ND 1. 79-00-5 1,1,2-TRICHLOROETHANE ND 1. 79-01-6 TRICHLOROETHYLENE ND 1.		•		
76-13-1 FREON-TF ND 1. 119-78-6 2-HEXANONE ND 5. 75-09-2 METHYLENE CHLORIDE ND 5. 108-10-1 4-METHYL-2-PENTANONE (MIBK) ND 5. 100-42-5 STYRENE ND 1. 79-34-5 1,1,2,2-TETRACHLOROETHANE ND 1. 127-18-4 TETRACHLOROETHYLENE ND 1. 109-99-9 TETRAHYDROFURAN ND 5. 108-88-3 TOLUENE ND 1. 71-55-6 1,1,1-TRICHLOROETHANE ND 1. 79-00-5 1,1,2-TRICHLOROETHANE ND 1. 79-01-6 TRICHLOROETHYLENE ND 1.				
119-78-6 2-HEXANONE ND 5. 75-09-2 METHYLENE CHLORIDE ND 5. 108-10-1 4-METHYL-2-PENTANONE (MIBK) ND 5. 100-42-5 STYRENE ND 1. 79-34-5 1,1,2,2-TETRACHLOROETHANE ND 1. 127-18-4 TETRACHLOROETHYLENE ND 1. 109-99-9 TETRAHYDROFURAN ND 5. 108-88-3 TOLUENE ND 1. 71-55-6 1,1,1-TRICHLOROETHANE ND 1. 79-00-5 1,1,2-TRICHLOROETHANE ND 1. 79-01-6 TRICHLOROETHYLENE ND 1.				
75-09-2 METHYLENE CHLORIDE ND 5. 108-10-1 4-METHYL-2-PENTANONE (MIBK) ND 5. 100-42-5 STYRENE ND 1. 79-34-5 1,1,2,2-TETRACHLOROETHANE ND 1. 127-18-4 TETRACHLOROETHYLENE ND 1. 109-99-9 TETRAHYDROFURAN ND 5. 108-88-3 TOLUENE ND 1. 71-55-6 1,1,1-TRICHLOROETHANE ND 1. 79-00-5 1,1,2-TRICHLOROETHANE ND 1. 79-01-6 TRICHLOROETHYLENE ND 1.				
108-10-1 4-METHYL-2-PENTANONE (MIBK) ND 5. 100-42-5 STYRENE ND 1. 79-34-5 1,1,2,2-TETRACHLOROETHANE ND 1. 127-18-4 TETRACHLOROETHYLENE ND 1. 109-99-9 TETRAHYDROFURAN ND 5. 108-88-3 TOLUENE ND 1. 71-55-6 1,1,1-TRICHLOROETHANE ND 1. 79-00-5 1,1,2-TRICHLOROETHANE ND 1. 79-01-6 TRICHLOROETHYLENE ND 1.				
100-42-5 STYRENE ND 1. 79-34-5 1,1,2,2-TETRACHLOROETHANE ND 1. 127-18-4 TETRACHLOROETHYLENE ND 1. 109-99-9 TETRAHYDROFURAN ND 5. 108-88-3 TOLUENE ND 1. 71-55-6 1,1,1-TRICHLOROETHANE ND 1. 79-00-5 1,1,2-TRICHLOROETHANE ND 1. 79-01-6 TRICHLOROETHYLENE ND 1.				
79-34-5 1,1,2,2-TETRACHLOROETHANE ND 1. 127-18-4 TETRACHLOROETHYLENE ND 1. 109-99-9 TETRAHYDROFURAN ND 5. 108-88-3 TOLUENE ND 1. 71-55-6 1,1,1-TRICHLOROETHANE ND 1. 79-00-5 1,1,2-TRICHLOROETHANE ND 1. 79-01-6 TRICHLOROETHYLENE ND 1.		•	ND	
127-18-4 TETRACHLOROETHYLENE ND 1. 109-99-9 TETRAHYDROFURAN ND 5. 108-88-3 TOLUENE ND 1. 71-55-6 1,1,1-TRICHLOROETHANE ND 1. 79-00-5 1,1,2-TRICHLOROETHANE ND 1. 79-01-6 TRICHLOROETHYLENE ND 1.				
109-99-9 TETRAHYDROFURAN ND 5. 108-88-3 TOLUENE ND 1. 71-55-6 1,1,1-TRICHLOROETHANE ND 1. 79-00-5 1,1,2-TRICHLOROETHANE ND 1. 79-01-6 TRICHLOROETHYLENE ND 1.				1.
108-88-3 TOLUENE ND 1. 71-55-6 1,1,1-TRICHLOROETHANE ND 1. 79-00-5 1,1,2-TRICHLOROETHANE ND 1. 79-01-6 TRICHLOROETHYLENE ND 1.	127-18-4	TETRACHLOROETHYLENE	ND	1.
71-55-6	109-99-9	TETRAHYDROFURAN	ND	5.
79-00-5 1,1,2-TRICHLOROETHANE ND 1. 79-01-6 TRICHLOROETHYLENE ND 1.	108-88-3	TOLUENE	ND	1.
79-00-5 1,1,2-TRICHLOROETHANE ND 1. 79-01-6 TRICHLOROETHYLENE ND 1.	71-55-6	1,1,1-TRICHLOROETHANE	ND	1.
79-01-6 TRICHLOROETHYLENE ND 1.	79-00-5		ND	1.
	79-01-6			
75-69-4 TRICHLOROFLUOROMETHANE ND 1.	75-69-4			
108-05-4 VINYL ACETATE ND 5.	· ·			
75-01-4 VINYL CHLORIDE ND 5.				
95-47-6 TOTAL XYLENES ND 1.	95-47-6			

CLIENT: WOODWARD-CLYDE WCAS JOB #: 13191

SAMPLE: WCC-8S-1R

UNITS: UG/L (PPB)

APPROXIMATE

COMPOUND NAME

FRACTION CONCENTRATION

1 NONE FOUND

CLIENT: WOODWARD-CLYDE SAMPLE: WCC-10S-1A

WCAS JOB #: 13191

DATE RECEIVED: 07/13/89 RUN NUMBER: 13193V4
DATE EXTRACTED: 07/21/89 SAMPLE AMOUNT: 5ML
DATE ANALYZED: 07/21/89 MATRIX: WATER

CAS #	COMPOUND	CONCENTRATION	
67-64-1	ACETONE	========= ทD	5.
71-43-2	BENZENE	ND	1.
75-27-4	BROMODICHLOROMETHANE	ND	1.
75-27-4	BROMOFORM	ND	1.
74-83-9	BROMOMETHANE	ND	5.
78-93-3		ND	5.
75-15-0	2-BUTANONE (MEK) CARBON DISULFIDE	ND	1.
56-23-5	CARBON DISOLFIDE CARBON TETRACHLORIDE	ND	1.
108-90-7	CHLOROBENZENE	ND	1.
75-00-3	CHLOROETHANE	ND ND	5.
110-75-8	2-CHLOROETHYLVINYL ETHER	ND	10.
67-66-3	CHLOROFORM	3.	1.
74-87-3	CHLOROMETHANE	ND	5.
108-41-8	CHLOROTOLUENE	ND	1.
124-48-1	DIBROMOCHLOROMETHANE	ND	1.
95-50-1	1,2-DICHLOROBENZENE	ND	1.
541-73-1	1,3-DICHLOROBENZENE	ND	1.
106-46-7	1,4-DICHLOROBENZENE	ND	1.
75-34-3	1,1-DICHLOROETHANE	ND	1.
107-06-2	1,2-DICHLOROETHANE	ND	1.
75-35-4	1,1-DICHLOROETHYLENE	2.	i.
156-59-4	CIS-1,2-DICHLOROETHYLENE	ND	1.
156-60-5	TRANS-1,2-DICHLOROETHYLENE	ND	1.
78-87-5	1,2-DICHLOROPROPANE	ND	1.
10061-01-5		ND	1.
10061-02-6	TRANS-1,3-DICHLOROPROPENE	ND	1.
100-41-4	ETHYLBENZENE	ND	1.
106-93-4	ETHYLENE DIBROMIDE	ND	1.
76-13-1	FREON-TF	ND	1.
119-78-6	2-HEXANONE	ND	5.
75-09-2	METHYLENE CHLORIDE	ND	5.
108-10-1	4-METHYL-2-PENTANONE (MIBK)	ND	5.
100-42-5	STYRENE	ND	1.
79-34-5	1,1,2,2-TETRACHLOROETHANE	ND	1.
109-99-9	TETRAHYDROFURAN	ND	5.
108-88-3	TOLUENE	ND	1.
71-55-6	1,1,1-TRICHLOROETHANE	ND	i.
79-00-5	1,1,2-TRICHLOROETHANE	ND	1.
79-01-6	TRICHLOROETHYLENE	86.	1.
75-69-4	TRICHLOROFLUOROMETHANE	ND	1.
108-05-4	VINYL ACETATE	ND	5.
75-01-4	VINIL ACEINIE VINYL CHLORIDE	ND	5.
95-47-6	TOTAL XYLENES	ND	1.
JJ 4 / U	TOTAL VIDENTO	ND	- •

CLIENT:

WOODWARD-CLYDE

SAMPLE: WCC-10S-1A

WCAS JOB #: 13191

101

UNITS: UG/L (PPB)

APPROXIMATE

COMPOUND NAME

FRACTION CONCENTRATION

1 NONE FOUND

CLIENT: WOODWARD-CLYDE SAMPLE: WCC-10S-1B

WCAS JOB #: 13191

DATE RECEIVED: 07/13/89 RUN NUMBER: 13191V5
DATE EXTRACTED: 07/21/89 SAMPLE AMOUNT: 5ML
DATE ANALYZED: 07/21/89 MATRIX: WATER

VOLATILE ORG	ANICS (EFR 024/0240)	UNITS. UG/L	(<i>PFD</i>)
CAS #	COMPOUND	CONCENTRATION	
67-64-1	ACETONE	ND	5.
71-43-2	BENZENE	ND	1.
75-27-4	BROMODICHLOROMETHANE	ND	1.
75-25-2	BROMOFORM	ND	1.
74-83-9	BROMOMETHANE	ND	5.
78-93-3	2-BUTANONE (MEK)	ND	5.
75-15-0	CARBON DISULFIDE	ND	1.
56-23-5	CARBON TETRACHLORIDE	ND	1.
108-90-7	CHLOROBENZENE	ND	1.
75-00-3	CHLOROBENZENE	ND	5.
110-75-8	2-CHLOROETHYLVINYL ETHER	ND	
			10.
67-66-3	CHLOROFORM	3.	1.
74-87-3	CHLOROMETHANE	ND	5.
108-41-8	CHLOROTOLUENE	ND	1.
124-48-1	DIBROMOCHLOROMETHANE	ND	1.
95-50-1	1,2-DICHLOROBENZENE	ND	1.
541-73-1	1,3-DICHLOROBENZENE	ND	1.
106-46-7	1,4-DICHLOROBENZENE	ND	1.
75-34-3	1,1-DICHLOROETHANE	ND	1.
107-06-2	1,2-DICHLOROETHANE	ND	1.
75-35-4	1,1-DICHLOROETHYLENE	1.	1.
156-59-4	CIS-1,2-DICHLOROETHYLENE	ND	1.
156-60-5	TRANS-1,2-DICHLOROETHYLENE	ND	1.
78-87-5	1,2-DICHLOROPROPANE	ND	1.
10061-01-5		ND	1.
10061-02-6	•	ND	ī.
100-41-4	ETHYLBENZENE	ND	i.
106-93-4	ETHYLENE DIBROMIDE	ND	1.
76-13-1	FREON-TF	ND	1.
119-78-6	2-HEXANONE	ND	5.
75-09-2			
	METHYLENE CHLORIDE	ND	5.
108-10-1	4-METHYL-2-PENTANONE (MIBK)	ND	5.
100-42-5	STYRENE	ND	1.
79-34-5	1,1,2,2-TETRACHLOROETHANE	ND	1.
127-18-4	TETRACHLOROETHYLENE	ND	1.
109-99-9	TETRAHYDROFURAN	ND	5.
108-88-3	TOLUENE	ND	1.
71-55-6	1,1,1-TRICHLOROETHANE	ND	1.
79-00-5	1,1,2-TRICHLOROETHANE	ND	1.
79-01-6	TRICHLOROETHYLENE	87.	1.
75-69-4	TRICHLOROFLUOROMETHANE	ND	1.
108-05-4	VINYL ACETATE	ND	5.
75-01-4	VINYL CHLORIDE	ND	5.
95-47-6	TOTAL XYLENES	ND	1.
		ND	1.

CLIENT: WOODWARD-CLYDE

SAMPLE: WCC-10S-1B

WCAS JOB #: 13191

UNITS: UG/L (PPB)

APPROXIMATE

COMPOUND NAME

FRACTION CONCENTRATION

1 NONE FOUND

CLIENT: WOODWARD-CLYDE SAMPLE: WCC-10S-1R

WCAS JOB #: 13191

DATE RECEIVED: 07/13/89 RUN NUMBER: 13191V6
DATE EXTRACTED: 07/21/89 SAMPLE AMOUNT: 5ML
DATE ANALYZED: 07/21/89 MATRIX: WATER

CAS #	COMPOUND	CONCENTRATION	DET LIMIT
67-64-1	ACETONE	ND	5.
71-43-2	BENZENE	ND	1.
75-27-4	BROMODICHLOROMETHANE	ND	1.
75-25-2	BROMOFORM	ND	1.
74-83-9	BROMOMETHANE	ND	5.
78-93-3	2-BUTANONE (MEK)	ND	5.
75-15-0	CARBON DISULFIDE	ND	1.
56-23-5	CARBON TETRACHLORIDE	ND	1.
108-90-7	CHLOROBENZENE	ND	1.
75-00-3	CHLOROETHANE	ND	5.
110-75-8		ND	10.
67-66-3	CHLOROFORM	ND	1.
74-87-3	CHLOROMETHANE	ND	5.
108-41-8	CHLOROTOLUENE	ND	1.
124-48-1	DIBROMOCHLOROMETHANE	ND	1.
95-50-1	1,2-DICHLOROBENZENE	ND	1.
541-73-1	1,3-DICHLOROBENZENE	ND	1.
106-46-7	1,4-DICHLOROBENZENE	ND	1.
75-34-3	1,1-DICHLOROETHANE	ND	1.
107-06-2	1,2-DICHLOROETHANE	ND	1.
75-35-4	1,1-DICHLOROETHYLENE	ND	1.
156-59-4	CIS-1,2-DICHLOROETHYLENE	ND	1.
156-60-5	TRANS-1,2-DICHLOROETHYLENE	ND	1.
78-87-5	1,2-DICHLOROPROPANE	ND	1.
10061-01-5	CIS-1,3-DICHLOROPROPENE	ND	1.
10061-02-6	TRANS-1,3-DICHLOROPROPENE	ND	1.
100-41-4	ETHYLBENZENE	ND	1.
106-93-4	ETHYLENE DIBROMIDE	ND	1.
76-13-1	FREON-TF	ND	1.
119-78-6	2-HEXANONE	ND	5.
75-09-2	METHYLENE CHLORIDE	ND	5.
108-10-1	4-METHYL-2-PENTANONE (MIBK)	ND	5.
100-42-5	STYRENE	ND	1.
79-34-5	1,1,2,2-TETRACHLOROETHANE	ND	1.
127-18-4	TETRACHLOROETHYLENE	ND	1.
109-99-9	TETRAHYDROFURAN	ND	5.
108-88-3	TOLUENE	ND	1.
71-55-6	1,1,1-TRICHLOROETHANE	ND	1.
79-00-5	1,1,2-TRICHLOROETHANE	ND	1.
79-01-6	TRICHLOROETHYLENE	ND	1.
75-69-4	TRICHLOROFLUOROMETHANE	ND	1.
108-05-4	VINYL ACETATE	ND	5.
75-01-4		ND	5.
95-47-6	VINYL CHLORIDE	ND ND	1.
95-4/-0	TOTAL XYLENES	ND	1.

CLIENT:

WOODWARD-CLYDE

SAMPLE: WCC-10S-1R

WCAS JOB #: 13191

UNITS: UG/L (PPB)

APPROXIMATE

COMPOUND NAME

FRACTION CONCENTRATION ________

1 NONE FOUND

CLIENT: WOODWARD-CLYDE SAMPLE: WCC-11S-1A

WCAS JOB #: 13191

DATE RECEIVED: 07/13/89 RUN NUMBER: 13191V63
DATE EXTRACTED: 07/25/89 SAMPLE AMOUNT: 5ML
DATE ANALYZED: 07/26/89 MATRIX: WATER

CAS #	COMPOUND	CONCENTRATION		
		=======================================		
67-64-1	ACETONE	ND	5.	
71-43-2	BENZENE	ND	1.	
75-27-4	BROMODICHLOROMETHANE	ND	1.	
75-25-2	BROMOFORM	ND	1.	
74-83-9	BROMOMETHANE	ND	5.	
78-93-3	2-BUTANONE (MEK)	ND	5.	
75-15-0	CARBON DISULFIDE	ND	1.	
56-23-5	CARBON TETRACHLORIDE	ND	1.	
108-90-7	CHLOROBENZENE	ND	1.	
75-00-3	CHLOROETHANE 2-CHLOROETHYLVINYLETHER	ND	5.	
110-75-8	2-CHLOROETHYLVINYLETHER	ND	10.	
67-66-3	CHLOROFORM	ND	5.	
74-87-3	CHLOROMETHANE	ND	1.	
108-41-8	CHLOROTOLUENE	ND ND	1.	
	DIBROMOCHLOROMETHANE	ND	1.	
	1,2-DICHLOROBENZENE	ND	1.	
	1,3-DICHLOROBENZENE	ND	1.	
	1,4-DICHLOROBENZENE	ND	1.	
	1,1-DICHLOROETHANE	ND	1.	
	1,2-DICHLOROETHANE	ND	1.	
	1,1-DICHLOROETHYLENE	ND	1.	
156-59-4		ND	1.	
156-60-5		ND	1.	
78-87-5	1,2-DICHLOROPROPANE	ND	1.	
10061-01-5		ND	1.	
10061-02-6		ND	1.	
100-41-4	ETHYLBENZENE FORMULENE DIRDOMINE	ND	1.	
106-93-4	ETHYLENE DIBROMIDE	ND	1.	
76-13-1	FREON-TF	ND	5.	
119-78-6	2-HEXANONE	ND	5.	
15-09-2	METHYLENE CHLORIDE	ND	5.	
	4-METHYL-2-PENTANONE (MIBK)	ND	1.	
100-42-5		ND	ī.	
79-34-5	1,1,2,2-TETRACHLOROETHANE	ND	ī.	
127-18-4	TETRACHLOROETHYLENE	ND	5.	
109-99-9	TETRAHYDROFURAN	ND	1.	
108-88-3	TOLUENE	ND	1.	
71-55-6	1,1,1-TRICHLOROETHANE 1,1,2-TRICHLOROETHANE	ND	1.	
79-00-5	· · ·	ND	1.	
79-01-6	TRICHLOROETHYLENE TRICHLOROFLUOROMETHANE	ND	1.	
75-69-4	VINYL ACETATE	ND	5.	
108-05-4	VINYL ACETATE VINYL CHLORIDE	ND	5.	
75-01-4	TOTAL XYLENES	ND	1.	
95-47-6	IOIAL VIPENES	NO	••	

CLIENT: WOODWARD-CLYDE

SAMPLE: WCC-11S-1A

WCAS JOB #: 13191

UNITS: UG/L (PPB)

APPROXIMATE

COMPOUND NAME

FRACTION CONCENTRATION _______

1 NONE FOUND

Data Reporting Qualifiers

- Value If the result is a value greater than or equal to the Detection Limit (DL), the value is reported.
- ND Indicates that the compound was analyzed for but not detected. The minimum DL for the sample with the ND is reported based on necessary concentration or dilution actions.
- TR Indicates an estimated value. This flag is used when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified DL but greater than zero.

13/11/12

		Woo	dward-	Clyde Consult	ants 🖣	SHIPM	IENT NO.:	_6_
	-			CUSTODY RECO			OF.	Z
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	PROJEC	CT NAME:	Vaig	as Aircraft (<u>.o./ C</u>	<u>6</u>		
	PROJEC	CT NO.:	894	1863 J-TASK				
Sample Number	Location	Type of Material	Sample Method	Type of Container	Type o	of Preservation Chemical	Analysis	Required *
WCC-15-1A	WC-15	WOTER	BAILER	40 MR UDA	ICE	NONE	CUNTA	
wcc-15-18			1 1	¥ ,	1-1-		T '	KIR CAKINGLA
WCC-15-1C	↓			407 glass	1-1-		(714)	335-686
WCC-15-1R	V		 	40 ne VSA	+ + +	1	<u> </u>	
WCC-25-14	1 .	 	├ }	ļ.,	+-++		 	
WCC-25-18	 	 	 	V -4-	+		 	
UCC-25-19		 	 	4 02. 755	+ + +			
Mc-25-1R		 	+ +	40 ~ WOA	+ ++		-	
WCC -35-1A		 	 	 	+ ++		 	
WCC-35-1B		 	 	1 1 1	+ +			
wcc-35-10	T	}	-	4 02.9/55 4) 28 VUA	+			
WC-35-1R	. •		 	40 10 100	+++			
WCC-45-1A	T	1		+ 1/	 		 	
WC-45-1B		 	++	1 - 21.00	+ +			
WCC-451C	1 1/	 	 	4 oz. glass	' 		 	
WCC-45-1R		 	+	40 20	+ +			
WCK-\$5-1A		 	+	+ - - -	+ + +		†	
WCC-55-18		 	 	4 02. 945S	+ +			·
ucc-55-10 wcc-55-12		1	$+$ \forall	40 × VOA	1 1	2.1		
Total Number of	Samples Shi	ipped: 35	Sample	er's Signature:	Vile.	Ha		
Relinquished By:		War.		Received By:	1) -1	0.1.		Date
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Company Reason	aca 7	() = b	WCAS	Oompany				9:05
Relinquished By:				Received By:	· 61	2. []		Date
Signature	1 Rose	le		Received By: Signature	my	1 Pard		711318
Printed Name Company	D. Kozic	(K)		Printed Name Company	1 2 2		2	Time
Reason	DELIVE	(RFD)			VAC US	10131	ΑI	17:10
Relinguished By:				Received By:				Date
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Printed Name Company				Company				Time
Reason					 			<u> </u>
Special Shipment			Requiremen	its:				
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* Note - This does not constitute authorization to proceed with analysis

LA. OR -0183

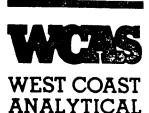
	•	Woo	dward-	Clyde Consulta	ants 🗳	SHIPM	ENT NO.:_	
	-	С	HAIN OF	CUSTODY RECO	RD	PAGE	<u>2</u> of_	
		_	D /	C Arrived (· / C	/ DATE	7/12	139
	PROJEC	T NAME:_	bush	C ALCIAIT L	<u>U.</u> / C	6		
	PROJEC	T NO.:	19418	563) - 1456	<u>, </u>		,	
Sample Number	Location	Type of Material		Type of Container	Type o	f Preservation Chemical	Analysis	Required *
ICC - 75 - IA	10166-7			40 mi VOA	KE	NEIT	Cury	<u>ct:</u>
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VCC -75-1C				4 oz gless			(7,4) 3	35-16800
NCC-75-18	₩			DAY OUA			+	
NCC-85-1A	WCK-Si				+ + +		 	
wcc-35-1B	1 1			4 117 glass	 			
WCC-85-19 WCC-85-11				402. glass				
JCC - 105 - 1 A								
1CC-105-1B				V ,				
VCC-105-10	·			407.9655	+			
VCC-105-1R	V			45 2	+			
19-18-1A			-		1 1			
WCC-115-1B	1 1			4 02. 7650 40 NO VOX				
vcc-115-1R	1 -1/		V	40 Me VOX			<u> </u>	
D.T A			575	1	-			
D.I-B	1/3/	<u> </u>	525	<u> </u>	131	-1		
	-							
Total Number of	Samples Sh	ipped: 3名	Sample	er's Signature:	Yell	St.		
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Relinquished By Signature	Park	~~~~~		Received By: Signature Printed Name	my K	c lara	<u> </u>	7/13/5
Signature	D. OROZ	ick!		Printed Name Company	NCAR		<u></u>	Time
Reason	DELIVE	e E D				101319	1	17 11
Relinquished By:				Received By:			·-	Date /
Signature Printed Name				Printed Name_				Time
Company				Company				
Reason Relinquished By:				Received By:				Date
Signature				Signature				
Printed Name Company								Time
Reason				<u></u>		<u> </u>		<u> </u>
Special Shipment	/ Handling	/ Storage	Requiremen	nts:				

August 9, 1989

RECEIVED

AUG 1 0 1513

WCC-SANTA ANA



WOODWARD-CLYDE CONSULTANTS 203 N. Golden Circle Drive Santa Ana, CA 92705

Attn:

Dr. Alistaire Callender

JOB NO.

13290

SERVICE, INC.

Α

LABORATORY REPORT

Samples Received: Twelve (12) waters

Date Received: 7-26-89

Date Released for Analysis: 8-7-89

Purchase Order No: Proj#: 8941863J/Task 1-Douglas Aircraft

The samples were analyzed as follows:

Samples Analyzed

Analysis

Results

Two (2) waters

Volatile Organics

by EPA 624

Data Sheets

Page 1 of 1

Michael Shelton

Senior Chemist

 $\mathsf{D} \mathcal{L} \mathsf{f}$. Northington, Ph.D.

Technical Director

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: WCC-1D-1A

WCAS JOB #: 13290

DATE RECEIVED: 07/26/89 RUN NUMBER: 13290V1
DATE EXTRACTED: 08/08/89 SAMPLE AMOUNT: 5ML
DATE ANALYZED: 08/08/89 MATRIX: WATER

CAS				
67-64-1 ACETONE	**			
71-43-2 BENZENE				
75-27-4 BROMODICHLOROMETHANE				
75-25-2 BROMOFORM ND 1. 74-83-9 BROMOMETHANE ND 5. 78-93-3 2-BUTANONE (MEK) ND 5. 75-15-0 CARBON DISULFIDE ND 1. 108-90-7 CHLOROBENZENE ND 1. 75-00-3 CHLOROFTHANE ND 10. 710-75-8 2-CHLOROETHAVILYINYL ETHER ND 10. 67-66-3 CHLOROFORM ND 1. 74-87-3 CHLOROFORM ND 1. 108-41-8 CHLOROTOLUENE ND 1. 108-41-8 CHLOROGENZENE ND 1. 104-48-1 DIBROMOCHLOROMETHANE ND 1. 104-48-1 1,3-DICHLOROBENZENE ND 1. 55-50-1 1,2-DICHLOROBENZENE ND 1. 106-46-7 1,4-DICHLOROBENZENE ND 1. 107-34-3 1,1-DICHLOROBENZENE ND 1. 107-34-3 1,1-DICHLOROETHANE ND 1. 107-6-2				
74-83-9 BROMOMETHANE ND 5. 78-93-3 2-BUTANONE (MEK) ND 5. 75-15-0 CARBON DISULFIDE ND 1. 56-23-5 CARBON TETRACHLORIDE ND 1. 108-90-7 CHLOROBENZENE ND 1. 75-00-3 CHLOROETHANE ND 5. 110-75-8 2-CHLOROETHYLVINYL ETHER ND 10. 67-66-3 CHLOROFORM ND 1. 108-41-8 CHLOROMETHANE ND 1. 108-41-8 CHLOROMETHANE ND 1. 124-48-1 DIBROMOCHLOROMETHANE ND 1. 124-48-1 DIBROMOCHLOROMETHANE ND 1. 55-50-1 1,2-DICHLOROBENZENE ND 1. 106-46-7 1,4-DICHLOROBENZENE ND 1. 107-06-2 1,2-DICHLOROBENZENE ND 1. 107-06-2 1,2-DICHLOROBENZENE ND 1. 107-65-59-4 CIS-1,3-DICHLOROFTHYLENE ND 1. <tr< td=""><td></td><td></td><td></td><td></td></tr<>				
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67-66-3 CHLOROFORM ND 1. 74-87-3 CHLOROMETHANE ND 5. 108-41-8 CHLOROTOLUENE ND 1. 124-48-1 DIBROMOCHLOROMETHANE ND 1. 95-50-1 1,2-DICHLOROBENZENE ND 1. 541-73-1 1,3-DICHLOROBENZENE ND 1. 106-46-7 1,4-DICHLOROBENZENE ND 1. 107-06-2 1,2-DICHLOROETHANE ND 1. 107-06-2 1,2-DICHLOROETHYLENE ND 1. 156-59-4 CIS-1,2-DICHLOROETHYLENE ND 1. 156-59-4 CIS-1,2-DICHLOROETHYLENE ND 1. 156-60-5 TRANS-1,2-DICHLOROETHYLENE ND 1. 1061-01-5 CIS-1,3-DICHLOROPROPENE ND 1. 10061-02-6 TRANS-1,3-DICHLOROETHYLENE ND 1. 100-41-4 ETHYLENE DIBROMIDE ND 1. 106-93-4 ETHYLENE DIBROMIDE ND 1. 75-09-2 METHYLENE CHLORIDE ND </td <td>75-00-3</td> <td>CHLOROETHANE</td> <td>ND</td> <td>5.</td>	75-00-3	CHLOROETHANE	ND	5.
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108-41-8	67-66-3	CHLOROFORM	ND	1.
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75-34-3	541-73-1	1,3-DICHLOROBENZENE	ND	1.
107-06-2	106-46-7	1,4-DICHLOROBENZENE	ND	1.
1,1-DICHLOROETHYLENE	75-34-3	1,1-DICHLOROETHANE	ND	1.
156-59-4 CIS-1,2-DICHLOROETHYLENE	107-06-2	1,2-DICHLOROETHANE	ND	1.
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119-78-6 2-HEXANONE ND 5. 75-09-2 METHYLENE CHLORIDE ND 5. 108-10-1 4-METHYL-2-PENTANONE (MIBK) ND 5. 100-42-5 STYRENE ND 1. 79-34-5 1,1,2,2-TETRACHLOROETHANE ND 1. 127-18-4 TETRACHLOROETHYLENE ND 1. 108-88-3 TOLUENE 1. 1. 71-55-6 1,1,1-TRICHLOROETHANE ND 1. 79-00-5 1,1,2-TRICHLOROETHANE ND 1. 79-01-6 TRICHLOROETHYLENE 2. 1. 75-69-4 TRICHLOROFLUOROMETHANE ND 1. 108-05-4 VINYL ACETATE ND 5. 75-01-4 VINYL CHLORIDE ND 5.	106-93-4	ETHYLENE DIBROMIDE	ND	1.
75-09-2 METHYLENE CHLORIDE ND 5. 108-10-1 4-METHYL-2-PENTANONE (MIBK) ND 5. 100-42-5 STYRENE ND 1. 79-34-5 1,1,2,2-TETRACHLOROETHANE ND 1. 127-18-4 TETRACHLOROETHYLENE ND 1. 109-99-9 TETRAHYDROFURAN 5. 5. 108-88-3 TOLUENE 1. 1. 71-55-6 1,1,1-TRICHLOROETHANE ND 1. 79-00-5 1,1,2-TRICHLOROETHANE ND 1. 79-01-6 TRICHLOROETHYLENE 2. 1. 75-69-4 TRICHLOROFLUOROMETHANE ND 1. 108-05-4 VINYL ACETATE ND 5. 75-01-4 VINYL CHLORIDE ND 5.	76-13-1	FREON-TF	ND	1.
75-09-2 METHYLENE CHLORIDE ND 5. 108-10-1 4-METHYL-2-PENTANONE (MIBK) ND 5. 100-42-5 STYRENE ND 1. 79-34-5 1,1,2,2-TETRACHLOROETHANE ND 1. 127-18-4 TETRACHLOROETHYLENE ND 1. 109-99-9 TETRAHYDROFURAN 5. 5. 108-88-3 TOLUENE 1. 1. 71-55-6 1,1,1-TRICHLOROETHANE ND 1. 79-00-5 1,1,2-TRICHLOROETHANE ND 1. 79-01-6 TRICHLOROETHYLENE 2. 1. 75-69-4 TRICHLOROFLUOROMETHANE ND 1. 108-05-4 VINYL ACETATE ND 5. 75-01-4 VINYL CHLORIDE ND 5.	119-78-6	2-HEXANONE		
108-10-1 4-METHYL-2-PENTANONE (MIBK) ND 5. 100-42-5 STYRENE ND 1. 79-34-5 1,1,2,2-TETRACHLOROETHANE ND 1. 127-18-4 TETRACHLOROETHYLENE ND 1. 109-99-9 TETRAHYDROFURAN 5. 5. 108-88-3 TOLUENE 1. 1. 71-55-6 1,1,1-TRICHLOROETHANE ND 1. 79-00-5 1,1,2-TRICHLOROETHANE ND 1. 79-01-6 TRICHLOROETHYLENE 2. 1. 75-69-4 TRICHLOROFLUOROMETHANE ND 1. 108-05-4 VINYL ACETATE ND 5. 75-01-4 VINYL CHLORIDE ND 5.	75-09-2	METHYLENE CHLORIDE	ND	
100-42-5 STYRENE ND 1. 79-34-5 1,1,2,2-TETRACHLOROETHANE ND 1. 127-18-4 TETRACHLOROETHYLENE ND 1. 109-99-9 TETRAHYDROFURAN 5. 5. 108-88-3 TOLUENE 1. 1. 71-55-6 1,1,1-TRICHLOROETHANE ND 1. 79-00-5 1,1,2-TRICHLOROETHANE ND 1. 79-01-6 TRICHLOROETHYLENE 2. 1. 75-69-4 TRICHLOROFLUOROMETHANE ND 1. 108-05-4 VINYL ACETATE ND 5. 75-01-4 VINYL CHLORIDE ND 5.	108-10-1	4-METHYL-2-PENTANONE (MIBK)		
79-34-5 1,1,2,2-TETRACHLOROETHANE ND 1. 127-18-4 TETRACHLOROETHYLENE ND 1. 109-99-9 TETRAHYDROFURAN 5. 5. 108-88-3 TOLUENE 1. 1. 71-55-6 1,1,1-TRICHLOROETHANE ND 1. 79-00-5 1,1,2-TRICHLOROETHANE ND 1. 79-01-6 TRICHLOROETHYLENE 2. 1. 75-69-4 TRICHLOROFLUOROMETHANE ND 1. 108-05-4 VINYL ACETATE ND 5. 75-01-4 VINYL CHLORIDE ND 5.	100-42-5			
127-18-4 TETRACHLOROETHYLENE ND 1. 109-99-9 TETRAHYDROFURAN 5. 5. 108-88-3 TOLUENE 1. 1. 71-55-6 1,1,1-TRICHLOROETHANE ND 1. 79-00-5 1,1,2-TRICHLOROETHANE ND 1. 79-01-6 TRICHLOROETHYLENE 2. 1. 75-69-4 TRICHLOROFLUOROMETHANE ND 1. 108-05-4 VINYL ACETATE ND 5. 75-01-4 VINYL CHLORIDE ND 5.	79-34-5	1,1,2,2-TETRACHLOROETHANE		
109-99-9 TETRAHYDROFURAN 5. 5. 108-88-3 TOLUENE 1. 1. 71-55-6 1,1,1-TRICHLOROETHANE ND 1. 79-00-5 1,1,2-TRICHLOROETHANE ND 1. 79-01-6 TRICHLOROETHYLENE 2. 1. 75-69-4 TRICHLOROFLUOROMETHANE ND 1. 108-05-4 VINYL ACETATE ND 5. 75-01-4 VINYL CHLORIDE ND 5.	127-18-4			
108-88-3 TOLUENE 1. 1. 71-55-6 1,1,1-TRICHLOROETHANE ND 1. 79-00-5 1,1,2-TRICHLOROETHANE ND 1. 79-01-6 TRICHLOROETHYLENE 2. 1. 75-69-4 TRICHLOROFLUOROMETHANE ND 1. 108-05-4 VINYL ACETATE ND 5. 75-01-4 VINYL CHLORIDE ND 5.	109-99-9	TETRAHYDROFURAN		
71-55-6 1,1,1-TRICHLOROETHANE ND 1. 79-00-5 1,1,2-TRICHLOROETHANE ND 1. 79-01-6 TRICHLOROETHYLENE 2. 1. 75-69-4 TRICHLOROFLUOROMETHANE ND 1. 108-05-4 VINYL ACETATE ND 5. 75-01-4 VINYL CHLORIDE ND 5.	108-88-3	TOLUENE		
79-00-5 1,1,2-TRICHLOROETHANE ND 1. 79-01-6 TRICHLOROETHYLENE 2. 1. 75-69-4 TRICHLOROFLUOROMETHANE ND 1. 108-05-4 VINYL ACETATE ND 5. 75-01-4 VINYL CHLORIDE ND 5.	71-55-6	1,1,1-TRICHLOROETHANE		
79-01-6 TRICHLOROETHYLENE 2. 1. 75-69-4 TRICHLOROFLUOROMETHANE ND 1. 108-05-4 VINYL ACETATE ND 5. 75-01-4 VINYL CHLORIDE ND 5.	79-00-5			
75-69-4 TRICHLOROFLUOROMETHANE ND 1. 108-05-4 VINYL ACETATE ND 5. 75-01-4 VINYL CHLORIDE ND 5.	79-01-6	·		
108-05-4 VINYL ACETATE ND 5. 75-01-4 VINYL CHLORIDE ND 5.	75-69-4			
75-01-4 VINYL CHLORIDE ND 5.				
	75-01-4			
	95-47-6			

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: WCC-1D-1A

WCAS JOB #: 13290

UNITS: UG/L (PPB)

APPROXIMATE

COMPOUND NAME

FRACTION CONCENTRATION

1 NONE FOUND

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: WCC-3D-1A

WCAS JOB #: 13290

DATE RECEIVED: 07/26/89 RUN NUMBER: 13290V2
DATE EXTRACTED: 08/08/89 SAMPLE AMOUNT: 5ML
DATE ANALYZED: 08/08/89 MATRIX: WATER

CAS #	COMPOUND	CONCENTRATION	DET LIMIT	
67-64-1	ACETONE	nd ND	5.	
71-43-2	BENZENE	ND	1.	
75-27-4	BROMODICHLOROMETHANE	ND	1.	
75-25-2	BROMOFORM	ND	1.	
74-83-9	BROMOMETHANE	ND	5.	
78-93-3	2-BUTANONE (MEK)	ND	5.	
75-15-0	CARBON DISULFIDE	ND	1.	
56-23-5	CARBON TETRACHLORIDE	ND	1.	
108-90-7	CHLOROBENZENE	ND	1.	
75-00-3	CHLOROETHANE	ND	5.	
110-75-8	2-CHLOROETHYLVINYL ETHER	ND	10.	
67-66-3	CHLOROFORM	ND	1.	
74-87-3	CHLOROMETHANE	ND	5.	
108-41-8	CHLOROTOLUENE	ND	1.	
124-48-1	DIBROMOCHLOROMETHANE	ND	1.	
95-50-1	1,2-DICHLOROBENZENE	ND	1.	
541-73-1	1,3-DICHLOROBENZENE	ND	1.	
106-46-7	1,4-DICHLOROBENZENE	ND	1.	
75-34-3	1,1-DICHLOROETHANE	ND	1.	
107-06-2	1,2-DICHLOROETHANE	ND	1.	
75-35-4	1,1-DICHLOROETHYLENE	ND	1.	
156-59-4	CIS-1,2-DICHLOROETHYLENE	11.	1.	
156-60-5	TRANS-1, 2-DICHLOROETHYLENE	ND	1.	
78-87-5	1,2-DICHLOROPROPANE	ND	1.	
10061-01-5	CIS-1,3-DICHLOROPROPENE	ND	1.	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	ND	1.	
100-41-4	ETHYLBENZENE	ND	1.	
106-93-4	ETHYLENE DIBROMIDE	ND	1.	
76-13-1	FREON-TF	ND	1.	
119-78-6	2-HEXANONE	ND	5.	
75-09-2	METHYLENE CHLORIDE	ND	5.	
108-10-1	4-METHYL-2-PENTANONE (MIBK)	ND	5.	
100-42-5	STYRENE	ND	1.	
79-34-5	1,1,2,2-TETRACHLOROETHANE	ND	1.	
127-18-4	TETRACHLOROETHYLENE	ND	1.	
109-99-9	TETRAHYDROFURAN	ND	5.	
108-88-3	TOLUENE	3.	1.	
71-55-6	1,1,1-TRICHLOROETHANE	49.	1.	
79-00-5	1,1,2-TRICHLOROETHANE	ND	1.	
79-01-6	TRICHLOROETHYLENE	4.	1.	
75-69-4	TRICHLOROFLUOROMETHANE	ND	1.	
108-05-4	VINYL ACETATE	ND	5.	
75-01-4	VINYL CHLORIDE	ND	5.	
95-47-6	TOTAL XYLENES	ND	1.	

CLIENT: WOODWARD-CLYDE CONSULTANTS

WCAS JOB #: 13290

SAMPLE: WCC-3D-1A

UNITS: UG/L (PPB)

COMPOUND NAME

APPROXIMATE FRACTION CONCENTRATION

TRACTION CONCENTRATION

1 NONE FOUND

Data Reporting Qualifiers

- Value If the result is a value greater than or equal to the Detection Limit (DL), the value is reported.
- ND Indicates that the compound was analyzed for but not detected. The minimum DL for the sample with the ND is reported based on necessary concentration or dilution actions.
- TR Indicates an estimated value. This flag is used when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified DL but greater than zero.

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* Note — This do	es not con	stitute auth	orization t	o proceed	with analys	si s		LA, OR -0183-

September 8, 1989

WEST COAST ANALYTICAL SERVICE, INC.

WOODWARD-CLYDE CONSULTANTS 203 N. Golden Circle Drive Santa Ana, CA 92705

Attn:

Peter Glaesman

JOB NO.

13533

ANALYTICAL CHEMISTS

Α

LABORATORY REPORT

Samples Received: Fifty-five (55) liquids

Date Received: 8-24-89

Purchase Order No: Proj#: 8941863J Task 1/Douglas Aircraft

The samples were analyzed as follows:

Samples Analyzed

Analysis

Results

Thirteen (13) liquids Volatile Organics

by EPA 624

Data Sheets

Page 1 of 1

Michael Shelton

Senior Chemist

B. Michael Hovanec Senior Staff Chemist CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: WCC-1D-2A

WCAS JOB #: 13533

DATE RECEIVED: 08/24/89 RUN NUMBER: 13533V16
DATE EXTRACTED: 09/06/89 SAMPLE AMOUNT: 5ML
DATE ANALYZED: 09/06/89 MATRIX: WATER

CAS #	COMPOUND	CONCENTRATION	DET LIMIT
67-64-1		иD	5.
71-43-2		ND	1.
75-27-4	BROMODICHLOROMETHANE	ND	1.
75-25 -2	BROMOFORM	ND	1.
74-83-9	BROMOMETHANE	ND	5:
78 - 93 - 3	2-BUTANONE (MEK)	ND	5.
75-15-0	CARBON DISULFIDE	ND	1.
56-23 -5	CARBON TETRACHLORIDE	ND	1.
108-90-7	CHLOROBENZENE	ND	1.
75-00 -3	CHLOROETHANE	ND	5.
110-75-8	2-CHLOROETHYLVINYL ETHER	ND	10.
	CHLOROFORM	ND	1.
74-87 - 3	CHLOROMETHANE	ND	5.
108-41-8	CHLOROTOLUENE DIBROMOCHLOROMETHANE	ИD	1.
124-48-1	DIBROMOCHLOROMETHANE	ND	1.
95-50-1	1.2-DICHLOROBENZENE	ND	1.
541-73 - 1	1.3-DICHLOROBENZENE	ND	1.
106-46-7	1,4-DICHLOROBENZENE	ND	1.
75-34-3	1,1-DICHLOROETHANE	ND	1.
107-06-2	1,2-DICHLOROETHANE	ND	1.
75-35-4		ND	1.
156-59-4		ND	1.
156-6 0- 5	· · · · · · · · · · · · · · · · · · ·	ND	1.
78-87 - 5		ND	1.
10061-01-5	CIS-1,3-DICHLOROPROPENE	ND	1.
10061-02-6		ND	1.
100-41-4		ND	1.
106-93-4	ETHYLENE DIBROMIDE	ND	1.
76-13-1	FREON-TF	ND	1.
119-78-6	2-HEXANONE	ND	5.
75-09-2	METHYLENE CHLORIDE	ND	5.
108-10-1	4-METHYL-2-PENTANONE (MIBK)	ND	5.
100-42-5		ND	1.
79-34-5	1,1,2,2-TETRACHLOROETHANE	ND	1.
127-18-4	TETRACHLOROETHYLENE	ND	1.
109-99-9	TETRAHYDROFURAN	ND	5.
108-88-3	TOLUENE	ND	1.
71-55-6	1,1,1-TRICHLOROETHANE	1.	1.
79-00-5	1,1,2-TRICHLOROETHANE	ND	1.
79-01-6	TRICHLOROETHYLENE	2.	1.
75-69-4	TRICHLOROFLUOROMETHANE	ND	1.
108-05-4	VINYL ACETATE	ND	5.
75-01-4	VINYL CHLORIDE	ND	5.
95-47-6	TOTAL XYLENES	ND	1.
=		ND	1.

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CLIENT: WOODWARD-CLYDE CONSULTANTS

SAMPLE: WCC-1D-2A

VOA

WCAS JOB #: 13533

UNITS: UG/L (PPB)

APPROXIMATE

COMPOUND NAME

FRACTION CONCENTRATION

1 NONE FOUND

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: WCC-1S-2A

WCAS JOB #: 13533

DATE RECEIVED: 08/24/89 RUN NUMBER: 13533V17
DATE EXTRACTED: 09/06/89 SAMPLE AMOUNT: 150UL
DATE ANALYZED: 09/06/89 MATRIX: WATER

CAS #	COMPOUND	CONCENTRATION	DET LIMIT
67-64-1	ACETONE	мD	200.
71-43-2	BENZENE	ND	30.
75-27-4	BROMODICHLOROMETHANE	ND	30.
75-25 -2	BROMOFORM	ND	30.
74-83-9	BROMOMETHANE	ND	200.
78-93-3	2-BUTANONE (MEK)	ND	200.
75-15-0	CARBON DISULFIDE	ND	30.
56-23 - 5	CARBON TETRACHLORIDE	ND	30.
108-90-7	CHLOROBENZENE	ND	30.
75-00-3	CHLOROETHANE	ND	200.
110-75-8	2-CHLOROETHYLVINYL ETHER	ND	300.
67-66-3	CHLOROFORM	ND	30.
74-87-3	CHLOROMETHANE	ND	200.
108-41-8	CHLOROTOLUENE	ND	30.
124-48-1	DIBROMOCHLOROMETHANE	ND	30.
95-50-1	1,2-DICHLOROBENZENE	ND	30.
541-73-1	1,3-DICHLOROBENZENE	ND	30.
106-46-7		ИD	30.
75-34-3	1,1-DICHLOROETHANE	ND	30.
107-06-2	1,2-DICHLOROETHANE	ND	30.
75-35-4	1,1-DICHLOROETHYLENE	1500.	30.
156-59-4	CIS-1,2-DICHLOROETHYLENE	41.	30.
156-60-5	TRANS-1,2-DICHLOROETHYLENE	ND	30.
78-87 - 5	1,2-DICHLOROPROPANE	ND	30.
10061-01-5	CIS-1,3-DICHLOROPROPENE	ND	30.
10061-02-6	TRANS-1,3-DICHLOROPROPENE	ND	30.
100-41-4	ETHYLBENZENE	ND	30.
106-93-4	ETHYLENE DIBROMIDE	ND	30.
76-13-1	FREON-TF	ND	30.
119-78-6	2-HEXANONE	ND	200.
75-09-2	METHYLENE CHLORIDE	ND	200.
108-10-1	4-METHYL-2-PENTANONE (MIBK)	ND	200.
100-42-5	STYRENE	ND	30.
79-34-5	1,1,2,2-TETRACHLOROETHANE	ND	30.
127-18-4	TETRACHLOROETHYLENE	ND	30.
109-99-9	TETRAHYDROFURAN	ND	200.
108-88-3	TOLUENE	ND	30.
71-55-6	1,1,1-TRICHLOROETHANE	ND	30.
79-00-5	1,1,2-TRICHLOROETHANE	ND	30.
79-01-6	TRICHLOROETHYLENE	2800.	30.
75-69-4	TRICHLOROFLUOROMETHANE	ND	30.
108-05-4	VINYL ACETATE	ND	200.
75-01-4	VINYL CHLORIDE	ND	200.
95-47-6	TOTAL XYLENES	ND	30.

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: WCC-1S-2A

VOA

WCAS JOB #: 13533

UNITS: UG/L (PPB)

APPROXIMATE

COMPOUND NAME

FRACTION CONCENTRATION

1 NONE FOUND

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: WCC-2S-2A

WCAS JOB #: 13533

DATE RECEIVED: 08/24/89 RUN NUMBER: 13533V18
DATE EXTRACTED: 09/06/89 SAMPLE AMOUNT: 5ML
DATE ANALYZED: 09/06/89 MATRIX: WATER

CAS # ========	COMPOUND	CONCENTRATION	DET LIMIT	
67-64-1	ACETONE		5.	
71-43-2	BENZENE	ND	1.	
75-27-4	BROMODICHLOROMETHANE	ND	1.	
75-25-2	BROMOFORM	ND	1.	
74-83-9	BROMOMETHANE	ND ND	5.	
78-93 -3	2-BUTANONE (MEK)	ND	5. 5.	
75-15-0	CARBON DISULFIDÉ	ND		
56-23 - 5	CARBON TETRACHLORIDE	ND	1.	
108-90-7	CHLOROBENZENE	ND	1.	
75-00-3	CHLOROETHANE	ND	1.	
110-75-8	2-CHLOROETHYLVINYL ETHER	ND	5.	
67 - 66-3	CHLOROFORM		10.	
74-87-3	CHLOROMETHANE	ND	1.	
108-41-8	CHLOROTOLUENE	ND	5.	
124-48-1	DIBROMOCHLOROMETHANE	ND	1.	
95-50-1	1,2-DICHLOROBENZENE	ND	1.	
541-73-1	1,3-DICHLOROBENZENE	ND	1.	
106-46-7	1,4-DICHLOROBENZENE	ND	1.	
75-34-3	1,1-DICHLOROETHANE	ND	1.	
107-06-2	1,2-DICHLOROETHANE	ND	1.	
75-35-4	1,1-DICHLOROETHYLENE	ND	1.	
156-59-4	CIS-1,2-DICHLOROETHYLENE	ND	1.	
156-60-5	TRANS-1,2-DICHLOROETHYLENE	ND	1.	
78-87-5	1,2-DICHLOROPROPANE	ND	1.	
10061-01-5		ND	1.	
10061-02-6	CIS-1,3-DICHLOROPROPENE	ND	1.	
100-41-4	TRANS-1,3-DICHLOROPROPENE	ND	1.	
106-93-4	ETHYLBENZENE ETHYLENE DIDDOMIDE	ND	1.	
76-13-1	ETHYLENE DIBROMIDE	ND	1.	
119-78-6	FREON-TF	ND	1.	
75-09-2	2-HEXANONE	ND	5.	
108-10-1	METHYLENE CHLORIDE	ND	5.	
	4-METHYL-2-PENTANONE (MIBK)	ND	5.	
100-42-5	STYRENE	ND	1.	
79-34-5	1,1,2,2-TETRACHLOROETHANE	ND	1.	
127-18-4	TETRACHLOROETHYLENE	ND	1.	
109-99-9	TETRAHYDROFURAN	ND	5.	
108-88-3	TOLUENE	ND	1.	
71-55-6	1,1,1-TRICHLOROETHANE	ND	i.	
79-00-5	1,1,2-TRICHLOROETHANE	ND	1.	
79-01-6	TRICHLOROETHYLENE	3.	1.	
75-69-4	TRICHLOROFLUOROMETHANE	ND	1.	
108-05-4	VINYL ACETATE	ND	5.	
75-01-4	VINYL CHLORIDE	ND	5. 5.	
95-47-6	TOTAL XYLENES	ND		
		ND	1.	

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CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: WCC-2S-2A

VOA

WCAS JOB #: 13533

UNITS: UG/L (PPB)

APPROXIMATE

COMPOUND NAME

FRACTION CONCENTRATION

1 NONE FOUND

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: WCC-3D-2A

WCAS JOB #: 13533

DATE RECEIVED: 08/24/89

DATE EXTRACTED: 09/06/89

DATE ANALYZED: 09/06/89

RUN NUMBER: 13533V19

SAMPLE AMOUNT: 500UL

WATER

CAS #	COMPOUND	CONCENTRATION	DET LIMIT	
67-64-1	ACETONE	ND	50.	
71-43-2	BENZENE	ND	10.	
75-27-4	BROMODICHLOROMETHANE	ND	10.	
75-25-2	BROMOFORM	ND	10.	
74-83-9	BROMOMETHANE	ND	50.	
78-93-3	2-BUTANONE (MEK)	ND	50.	
75-15-0	CARBON DISULFIDE	ND	10.	
56-23-5	CARBON TETRACHLORIDE	ND	10.	
108-90-7	CHLOROBENZENE	ND	10.	
75-00-3	CHLOROETHANE	ND	50.	
110-75-8	2-CHLOROETHYLVINYL ETHER	ND	100.	
67-66-3	CHLOROFORM	ND	10.	
74-87-3	CHLOROMETHANE	ND	50.	
108-41-8	CHLOROTOLUENE	ND	10.	
124-48-1	DIBROMOCHLOROMETHANE	ND	10.	
95-50-1	1,2-DICHLOROBENZENE	ND	10.	
541-73-1	1,3-DICHLOROBENZENE	ND	10.	
106-46-7	1,4-DICHLOROBENZENE	ND	10.	
75-34 -3	1,1-DICHLOROETHANE	ND	10.	
107-06-2	1,2-DICHLOROETHANE	ND	10.	
75-35-4	1,1-DICHLOROETHYLENE	ND	10.	
156-59-4	CIS-1,2-DICHLOROETHYLENE	ND	10.	
156-60-5	TRANS-1,2-DICHLOROETHYLENE	ND	10.	
78-87 - 5	1,2-DICHLOROPROPANE	ND	10.	
10061-01-5	CIS-1,3-DICHLOROPROPENE	ND	10.	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	ND	10.	
7-41-4	ETHYLBENZENE	ND	10.	
-93-4	ETHYLENE DIBROMIDE	ND	10.	
13-1	FREON-TF	ND	10.	
1_9-78-6	2-HEXANONE	ND	50.	
75-09-2	METHYLENE CHLORIDE	ND	50.	
108-10-1	4-METHYL-2-PENTANONE (MIBK)	ND	50.	
100-42-5	STYRENE	ND	10.	
79-34-5	1,1,2,2-TETRACHLOROETHANE	ND	10.	
127-18-4	TETRACHLOROETHYLENE	ND	10.	
109-99-9	TETRAHYDROFURAN	ND	50.	
108-88-3	TOLUENE	ND	10.	
71-55-6	1,1,1-TRICHLOROETHANE	32.	10.	
79-00-5	1,1,2-TRICHLOROETHANE	ND	10.	
79-01-6	TRICHLOROETHYLENE	ND	10.	
75-69-4	TRICHLOROFLUOROMETHANE	ND	10.	
108-05-4	VINYL ACETATE	ND	50.	
75-01-4	VINYL CHLORIDE	ND	50.	
95-47-6	TOTAL XYLENES	ND	10.	
		ND	10.	

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CLIENT: WOODWARD-CLYDE CONSULTANTS

WCAS JOB #: 13533

SAMPLE: WCC-3D-2A

UNITS: UG/L (PPB)

APPROXIMATE

COMPOUND NAME

FRACTION CONCENTRATION

1 NONE FOUND VOA CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: WCC-3S-2A

WCAS JOB #: 13533

DATE RECEIVED: 08/24/89 RUN NUMBER: 13533V20
DATE EXTRACTED: 09/06/89 SAMPLE AMOUNT: 5UL
DATE ANALYZED: 09/06/89 MATRIX: WATER

CAS #	COMPOUND	CONCENTRATION	
67-64-1	ACETONE	ND	5000.
71-43-2	BENZENE	ND	1000.
75-27-4	BROMODICHLOROMETHANE	ND	1000.
75-25-2	BROMOFORM	ND	1000.
74-83-9	BROMOMETHANE	ND	5000.
78-93 - 3	2-BUTANONE (MEK)	ND	5000.
75-15-0	CARBON DISULFIDE	ND	1000.
56-23 - 5	CARBON TETRACHLORIDE	ND	1000.
108-90-7	CHLOROBENZENE	ND	1000.
75-00-3	CHLOROETHANE	ND	5000.
110-75-8	2-CHLOROETHYLVINYL ETHER	ND	10000.
67-66-3	CHLOROFORM	ND	1000:
74-87 - 3	CHLOROMETHANE	ND	5000.
108-41-8	CHLOROTOLUENE	ND	1000.
124-48-1	DIBROMOCHLOROMETHANE	ND	1000.
95-50 - 1	1,2-DICHLOROBENZENE	ND	1000.
541-73-1	1,3-DICHLOROBENZENE	ND	1000.
106 -46- 7	1,4-DICHLOROBENZENE	ND	1000.
75 -34-3	1,1-DICHLOROETHANE	ND	1000.
107-06-2	1,2-DICHLOROETHANE	ND	1000.
75-35-4	1,1-DICHLOROETHYLENE	56000.	1000.
156-59-4	CIS-1,2-DICHLOROETHYLENE	ND	1000.
156-60-5	TRANS-1,2-DICHLOROETHYLENE	ND	1000.
78-87 -5	1,2-DICHLOROPROPANE	ND	1000.
10061-01-5	CIS-1,3-DICHLOROPROPENE	ND	1000.
10061-02-6	TRANS-1,3-DICHLOROPROPENE	ND	1000.
100-41-4	ETHYLBENZENE	ND	1000.
106-93-4	ETHYLENE DIBROMIDE	ND	1000.
76-13-1	FREON-TF	ND	1000.
119-78-6	2-HEXANONE	ND	5000.
75-09-2	METHYLENE CHLORIDE	ND	5000.
108-10-1	4-METHYL-2-PENTANONE (MIBK)	ND	5000.
100-42-5	STYRENE	ND	1000.
79 -34-5	1,1,2,2-TETRACHLOROETHANE	ND	1000.
127-18-4	TETRACHLOROETHYLENE	ND	1000.
109-99-9	TETRAHYDROFURAN	ND	5000.
108-88-3	TOLUENE	56000.	1000.
71-55-6	1,1,1-TRICHLOROETHANE	78000.	1000.
79-00-5	1,1,2-TRICHLOROETHANE	ND	1000.
79-01-6	TRICHLOROETHYLENE	6000.	1000.
75-69-4	TRICHLOROFLUOROMETHANE	ND	1000.
108-05-4	VINYL ACETATE	ND	5000.
75-01-4	VINYL CHLORIDE	ND	5000.
95 -47-6	TOTAL XYLENES	ND	1000.

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CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: WCC-3S-2A

WCAS JOB #: 13533

UNITS: UG/L (PPB)

APPROXIMATE

COMPOUND NAME

FRACTION CONCENTRATION

VOA 10000. 1 UNIDENTIFIED COMPOUND

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: WCC-3S-2R

WCAS JOB #: 13533

DATE RECEIVED: 08/24/89 RUN NUMBER: 13533V21
DATE EXTRACTED: 09/06/89 SAMPLE AMOUNT: 5ML
DATE ANALYZED: 09/06/89 MATRIX: WATER

(400)					
CAS #	COMPOUND	CONCENTRATION			
67-64-1	ACETONE	ND	5.		
71-43-2	BENZENE	ND	1.		
75-27-4	BROMODICHLOROMETHANE	ND	1.		
75-25-2	BROMOFORM	ND	1.		
74-83-9	BROMOMETHANE	ND	5.		
78-93-3	2-BUTANONE (MEK)	ND	5.		
75-15-0	CARBON DISULFIDE	ND	1.		
56-23-5	CARBON TETRACHLORIDE	ND	1.		
108-90-7	CHLOROBENZENE	ND	1.		
75-00-3	CHLOROETHANE	ND	5.		
110-75-8	2-CHLOROETHYLVINYL ETHER	ND	10.		
67-66-3	CHLOROFORM	ND	1.		
74-87-3	CHLOROMETHANE	ND	5.		
108-41-8	CHLOROTOLUENE	ND	1.		
124-48-1	DIBROMOCHLOROMETHANE	ND	1.		
95-50-1	1,2-DICHLOROBENZENE	ND	1.		
541-73-1	1,3-DICHLOROBENZENE	ND	1.		
106-46-7	1,4-DICHLOROBENZENE	ND	1.		
75-34-3	1,1-DICHLOROETHANE	ND	1.		
107-06-2	1,2-DICHLOROETHANE	ND	1.		
75-35-4	1,1-DICHLOROETHYLENE	ND	1.		
156-59-4	CIS-1,2-DICHLOROETHYLENE	ND	1.		
156-60-5	TRANS-1,2-DICHLOROETHYLENE	ND	1.		
78-87-5	1,2-DICHLOROPROPANE	ND	1.		
10061-01-5	CIS-1,3-DICHLOROPROPENE	ND	1.		
10061-02-6	TRANS-1,3-DICHLOROPROPENE	ND	1.		
100-41-4	ETHYLBENZENE	ND	1.		
106-93-4	ETHYLENE DIBROMIDE	ND	1.		
76-13 -1	FREON-TF	ND	1.		
119-78-6	2-HEXANONE	ND	5.		
75-09-2	METHYLENE CHLORIDE	ND	5.		
108-10-1	4-METHYL-2-PENTANONE (MIBK)	ND	5.		
100-42-5	STYRENE	ND	1.		
79-34-5	1,1,2,2-TETRACHLOROETHANE	ND	ī.		
127-18-4	TETRACHLOROETHYLENE	ND	1.		
109-99-9	TETRAHYDROFURAN	ND	5.		
108-88-3	TOLUENE	ND	1.		
71-55-6	1,1,1-TRICHLOROETHANE	ND	1.		
79-00-5	1,1,2-TRICHLOROETHANE	ND	1.		
79-00-5	TRICHLOROETHYLENE		1.		
75-69-4		ND			
	TRICHLOROFLUOROMETHANE	ND	1.		
108-05-4	VINYL ACETATE	ND	5.		
75-01-4	VINYL CHLORIDE	ND	5.		
95-47-6	TOTAL XYLENES	ND	1.		

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CLIENT: WOODWARD-CLYDE CONSULTANTS

SAMPLE: WCC-3S-2R

WCAS JOB #: 13533

UNITS: UG/L (PPB)

APPROXIMATE

COMPOUND NAME

FRACTION CONCENTRATION

1 NONE FOUND

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: WCC-4S-2A

WCAS JOB #: 13533

DATE RECEIVED: 08/24/89 RUN NUMBER: 13533V22
DATE EXTRACTED: 09/06/89 SAMPLE AMOUNT: 1ML
DATE ANALYZED: 09/06/89 MATRIX: WATER

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CAS #	COMPOUND	CONCENTRATION	
67-64-1	ACETONE	ND	30.
71-43-2	BENZENE	ND	5.
75-27-4	BROMODICHLOROMETHANE	ND	5.
75-25 -2	BROMOFORM	ND	5.
74-83-9	BROMOMETHANE	ND	30.
78-93-3	2-BUTANONE (MEK)	ND	30.
75-15-0	CARBON DISULFIDÉ	ND	5.
56-23-5	CARBON TETRACHLORIDE	ND	5.
108-90-7	CHLOROBENZENE	ND	5.
75-00-3	CHLOROETHANE	ND	30.
110-75-8	2-CHLOROETHYLVINYL ETHER	ND	50.
67-66-3	CHLOROFORM	ND	5- .
74-87-3		ND	30.
108-41-8		ND	5.
124-48-1	DIBROMOCHLOROMETHANE	ND	5.
95-50-1	1,2-DICHLOROBENZENE	ND	5.
541-73-1	1,3-DICHLOROBENZENE	ND	5.
106-46-7	1,4-DICHLOROBENZENE	ND	5.
75-34-3	1,1-DICHLOROETHANE	ND	5.
107-06-2	1,2-DICHLOROETHANE	ND	5.
75-35-4	1,1-DICHLOROETHYLENE	360.	5.
156-59-4	CIS-1,2-DICHLOROETHYLENE	15.	5.
156-60-5	TRANS-1,2-DICHLOROETHYLENE	ND	5.
78-87-5	1,2-DICHLOROPROPANE	ND	5.
10061-01-5	CIS-1,3-DICHLOROPROPENE	ND	5.
10061-02-6	TRANS-1,3-DICHLOROPROPENE	ND	5.
100-41-4	ETHYLBENZENE	ND	5.
106-93-4	ETHYLENE DIBROMIDE	ND	5.
76-13-1	FREON-TF	ND	5.
119-78-6	2-HEXANONE	ND	30.
75-09-2	METHYLENE CHLORIDE	ND	30.
108-10-1	4-METHYL-2-PENTANONE (MIBK)	ND	30.
100-42-5	STYRENE	ND	5.
79-34-5	1,1,2,2-TETRACHLOROETHANE	ND	5.
127-18-4	TETRACHLOROETHYLENE	ND	5.
109-99-9	TETRAHYDROFURAN	ND	30.
108-88-3 71-55-6	TOLUENE	ND	5.
79-00-5	1,1,1-TRICHLOROETHANE	7.	5.
79-00 - 5	1,1,2-TRICHLOROETHANE	ND	5.
75-69-4	TRICHLOROETHYLENE	410.	5.
108-05-4	TRICHLOROFLUOROMETHANE	ND	5.
75-01-4	VINYL ACETATE	ND	30.
95-47-6	VINYL CHLORIDE	ND	30.
99-4/-0	TOTAL XYLENES	ND	5.

CLIENT: WOODWARD-CLYDE CONSULTANTS

SAMPLE: WCC-4S-2A

WCAS JOB #: 13533

UNITS: UG/L (PPB)

APPROXIMATE

COMPOUND NAME FRACTION CONCENTRATION

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1 UNIDENTIFIED COMPOUND VOA 300.

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: WCC-5S-2A

WCAS JOB #: 13533

DATE RECEIVED: 08/24/89 RUN NUMBER: 13533V29
DATE EXTRACTED: 09/06/89 SAMPLE AMOUNT: 5ML
DATE ANALYZED: 09/06/89 MATRIX: WATER

CAS #	COMPOUND	CONCENTRATION	
67-64-1	ACETONE		5.
71-43-2	BENZENE	ND	1.
75-27-4	BROMODICHLOROMETHANE	ND	1.
75-25-2	BROMOFORM	ND	1.
74-83-9	BROMOMETHANE	ND	5.
78-93-3	2-BUTANONE (MEK)	ND	5.
75-15-0	CARBON DISULFIDE	ND	1.
56-23-5	CARBON TETRACHLORIDE	ND	1.
108-90-7	CHLOROBENZENE	ND	1.
75-00-3	CHLORGETHANE	ND	5.
110-75-8	2-CHLOROETHYLVINYL ETHER	ND	10.
67-66-3	CHLOROFORM	ND	1.
74-87-3	CHLOROMETHANE	ND	5.
108-41-8	CHLOROTOLUENE	ND	1.
124-48-1	DIBROMOCHLOROMETHANE	ИД	1.
95-50-1	1,2-DICHLOROBENZENE	ЙD	1.
541-73 - 1	1,3-DICHLOROBENZENE	ND	1.
106-46-7	1,4-DICHLOROBENZENE	ND	1.
75-34-3	1,1-DICHLOROETHANE	ND	1.
107-06-2	1,2-DICHLOROETHANE	ND	1.
75-35-4	1,1-DICHLOROETHYLENE	ND	ī.
156-59-4	CIS-1,2-DICHLOROETHYLENE	4.	1.
156-60-5	TRANS-1,2-DICHLOROETHYLENE	ND	ĩ.
78-87-5	1,2-DICHLOROPROPANE	ND	1.
10061-01-5		ND	1.
10061-02-6		ND	1.
100-41-4	ETHYLBENZENE	ND	1.
106-93-4	ETHYLENE DIBROMIDE	ND	1.
76-13-1	FREON-TF	ND	1.
119-78-6	2-HEXANONE	ND	5.
75-09-2	METHYLENE CHLORIDE	ND	5.
108-10-1	4-METHYL-2-PENTANONE (MIBK)	ND	5.
100-42-5	•	ND	1.
79-34-5	1,1,2,2-TETRACHLOROETHANE	ND	1.
127-18-4	TETRACHLOROETHYLENE	ND	1.
109-99-9	TETRAHYDROFURAN	ND	5.
108-88-3	TOLUENE	ND	1.
71-55-6	1,1,1-TRICHLOROETHANE	ND	1.
79-00-5	1,1,2-TRICHLOROETHANE	ND	1.
79-01 - 6	TRICHLOROETHYLENE	12.	1.
75-69-4	TRICHLOROFLUOROMETHANE	ND	1.
108-05-4	VINYL ACETATE	ND	5.
75-01-4	VINYL CHLORIDE	ND	5. 5.
95-47-6	TOTAL XYLENES	ND	
J	TOTAL ATTEMES	ND	1.

CLIENT: WOODWARD-CLYDE CONSULTANTS

SAMPLE: WCC-5S-2A

WCAS JOB #: 13533

UNITS: UG/L (PPB)

APPROXIMATE

COMPOUND NAME FRACTION CONCENTRATION

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1 NONE FOUND VOA CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: WCC-5S-2R

WCAS JOB #: 13533

DATE RECEIVED: 08/24/89 RUN NUMBER: 13533V24
DATE EXTRACTED: 09/06/89 SAMPLE AMOUNT: 5ML
DATE ANALYZED: 09/06/89 MATRIX: WATER

CAS #	COMPOUND	CONCENTRATION	DET LIMIT
67-64-1	ACETONE	ND	5.
71-43-2	BENZENE	ND	1.
75-27-4	BROMODICHLOROMETHANE	ND	1.
75-25-2	BROMOFORM	ND	1.
74-83-9	BROMOMETHANE	ND	5.
78-93 - 3	2-BUTANONE (MEK)	ND	5.
75-15-0	CARBON DISULFIDE	ND	1.
56-23 - 5	CARBON TETRACHLORIDE	ND	1.
108-90-7	CHLOROBENZENE	ND	1.
75-00-3	CHLOROETHANE	ND	5.
110-75-8	2-CHLOROETHYLVINYL ETHER	ND	10.
67-66-3	CHLOROFORM	ND	1.
74-87-3	CHLOROMETHANE	ND	5.
108-41-8	CHLOROTOLUENE	ND	1.
124-48-1	DIBROMOCHLOROMETHANE	ND	1.
95-50-1	1,2-DICHLOROBENZENE	ND	1.
541-73-1	1,3-DICHLOROBENZENE	ND	1.
106-46-7	1,4-DICHLOROBENZENE	ND	1.
75-34-3	1,1-DICHLOROETHANE	ND	1.
107-06-2	1,2-DICHLOROETHANE	ND	1.
75-35-4	1,1-DICHLOROETHYLENE	ND	
156-59-4	CIS-1,2-DICHLOROETHYLENE		1.
156-60-5	TRANS-1,2-DICHLOROETHYLENE	ND	1.
78-87-5	1,2-DICHLOROPROPANE	ND	1.
10061-01-5	CIS-1,3-DICHLOROPROPENE	ND	1.
10061-01-5	·	ND	1.
100-41-4	TRANS-1,3-DICHLOROPROPENE	ND	1.
	ETHYLBENZENE	ND	1.
106-93-4	ETHYLENE DIBROMIDE	ND	1.
76-13-1	FREON-TF	ND	1.
119-78-6	2-HEXANONE	ND	5.
75-09-2	METHYLENE CHLORIDE	ND	5.
108-10-1	4-METHYL-2-PENTANONE (MIBK)	ND	5.
100-42-5	STYRENE	ND	1.
79-34 - 5	1,1,2,2-TETRACHLOROETHANE	ND	1.
127-18-4	TETRACHLOROETHYLENE	ND	1.
109-99-9	TETRAHYDROFURAN	ND	5.
108-88-3	TOLUENE	ND	1.
71-55-6	1,1,1-TRICHLOROETHANE	ND	1.
79-00-5	1,1,2-TRICHLOROETHANE	ND	1.
79-01-6	TRICHLOROETHYLENE	ND	1.
75-69-4	TRICHLOROFLUOROMETHANE	ND	1.
108-05-4	VINYL ACETATE	ND	5.
75-01-4	VINYL CHLORIDE	ND	5.
95-47-6	TOTAL XYLENES	ND	1.
· -		ND	. •

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CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: WCC-5S-2R

WCAS JOB #: 13533

UNITS: UG/L (PPB)

APPROXIMATE

COMPOUND NAME

FRACTION CONCENTRATION

1 NONE FOUND VOA CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: WCC-7S-2A

WCAS JOB #: 13533

DATE RECEIVED: 08/24/89 RUN NUMBER: 13533V25
DATE EXTRACTED: 09/06/89 SAMPLE AMOUNT: 200UL
DATE ANALYZED: 09/06/89 MATRIX: WATER

CAS #	, ,		
	COMPOUND	CONCENTRATION	
67-64-1	ACETONE	ND	100.
71-43-2	BENZENE	ND	30.
75-27-4	BROMODICHLOROMETHANE	ND	30.
75-25 -2	BROMOFORM	ND	30.
74-83-9	BROMOMETHANE	ND	100.
78-93 - 3	2-BUTANONE (MEK)	ND	100.
75-15-0	CARBON DISULFIDE	ND	30.
56-23 - 5	CARBON TETRACHLORIDE	ND	30.
108-90-7	CHLOROBENZENE	ND	30.
75-00-3	CHLOROETHANE	ND	100.
	2-CHLOROETHYLVINYL ETHER	ND	300.
67-66-3	CHLOROFORM	ND	30.
74-87-3	CHLOROMETHANE	ND	100.
108-41-8		ND	30.
	DIBROMOCHLOROMETHANE	ND	30.
95-50-1	1,2-DICHLOROBENZENE	ND	30.
	1,3-DICHLOROBENZENE	ND	30.
106-46-7		ND	30.
75-34-3	1,1-DICHLOROETHANE	ND	30.
107-06-2	·	ND	30.
75-35-4	1,1-DICHLOROETHYLENE	1100.	30.
156-59-4	CIS-1,2-DICHLOROETHYLENE	31.	30.
156-60-5	TRANS-1,2-DICHLOROETHYLENE	ND	30.
78-87-5	1,2-DICHLOROPROPANE	ND	30.
	CIS-1,3-DICHLOROPROPENE	ND	30.
10061-02-6	TRANS-1,3-DICHLOROPROPENE	ND	30.
100-41-4	ETHYLBENZENE	ND	30.
106-93-4	ETHYLENE DIBROMIDE	ND	30.
76-13-1	FREON-TF	ND	30.
119-78-6	2-HEXANONE	ND	100.
75-09-2		ND	100.
	4-METHYL-2-PENTANONE (MIBK)	ND	100.
100-42-5			30.
	1,1,2,2-TETRACHLOROETHANE	ND	30.
127-18-4	TETRACHLOROETHYLENE	ND ND	
109-99-9	TETRAHYDROFURAN		30.
109-99-9		ND	100.
	TOLUENE	ND	30.
71-55-6 79-00-5	1,1,1-TRICHLOROETHANE	66.	30.
	1,1,2-TRICHLOROETHANE	ND	30.
79-01-6	TRICHLOROETHYLENE	1400.	30.
75 - 69 -4	TRICHLOROFLUOROMETHANE	ND	30.
108-05-4	VINYL ACETATE	ND	100.
75-01-4	VINYL CHLORIDE	ND	100.
95 -47- 6	TOTAL XYLENES	ND	30.

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: WCC-7S-2A

WCAS JOB #: 13533

UNITS: UG/L (PPB)

APPROXIMATE

COMPOUND NAME

FRACTION CONCENTRATION

1 NONE FOUND

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: WCC-8S-2A

WCAS JOB #: 13533

DATE RECEIVED: 08/24/89 RUN NUMBER: 13533V26
DATE EXTRACTED: 09/06/89 SAMPLE AMOUNT: 1ML
DATE ANALYZED: 09/06/89 MATRIX: WATER

CAS #			
	COMPOUND	CONCENTRATION	DET LIMIT
67-64-1	ACETONE	ND	30.
71-43-2	BENZENE	ND	5.
75-27-4	BROMODICHLOROMETHANE	ND	5.
75-25 - 2	BROMOFORM	ND	5.
74-83-9	BROMOMETHANE	ND	30.
78-93 -3	2-BUTANONE (MEK)	ND	30.
75-15-0	CARBON DISULFIDE	ND	5.
56-23 - 5	CARBON TETRACHLORIDE	ND	5.
108-90-7	CHLOROBENZENE	ND	5.
75-00-3	CHLOROETHANE	ND	30.
110-75-8	2-CHLOROETHYLVINYL ETHER	ND	50.
67-66-3	CHLOROFORM	ND	5.
74-87-3	CHLOROMETHANE	ND	30.
108-41-8	CHLOROTOLUENE	ND	5.
124-48-1	DIBROMOCHLOROMETHANE	ND	5.
95-50-1	1,2-DICHLOROBENZENE	ND	5.
541-73-1	1,3-DICHLOROBENZENE	ND	5.
106-46-7	1,4-DICHLOROBENZENE	ND	5.
75-34 -3	1,1-DICHLOROETHANE	ND	5.
107-06-2	1,2-DICHLOROETHANE	ND	5.
75-35-4	1,1-DICHLOROETHYLENE	820.	5.
156-59-4	CIS-1,2-DICHLOROETHYLENE	7.	5.
156-60-5	•	, ND	5.
78-87-5	1,2-DICHLOROPROPANE	ND	5.
10061-01-5		ND	5.
10061-02-6		ND	5.
100-41-4	·· • · · · · · · · · · · · · · · · · ·	ND	5.
106-93-4		ND	5.
76-13 -1	FREON-TF		
119-78-6	2-HEXANONE	ND	5.
75-09 - 2		ND	30.
108-10-1		ND	30.
100-42-5	(332231)	ND	30.
		ND	5.
	1,1,2,2-TETRACHLOROETHANE	ND	5.
127-18-4	TETRACHLOROETHYLENE	ND	5.
109-99-9	TETRAHYDROFURAN	ND	30.
108-88-3	TOLUENE	ND	5.
71-55-6	1,1,1-TRICHLOROETHANE	130.	5.
79-00-5	1,1,2-TRICHLOROETHANE	ND	5.
79-01-6	TRICHLOROETHYLENE	430.	5.
75-69-4	TRICHLOROFLUOROMETHANE	ND	5.
108-05-4	VINYL ACETATE	ND	30.
75-01-4	VINYL CHLORIDE	ND	30.
95-47-6	TOTAL XYLENES	ND	5.

CLIENT: WOODWARD-CLYDE CONSULTANTS

SAMPLE: WCC-8S-2A

WCAS JOB #: 13533

UNITS: UG/L (PPB)

APPROXIMATE

COMPOUND NAME

FRACTION CONCENTRATION

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1 NONE FOUND

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: WCC-10S-2A

WCAS JOB #: 13533

DATE RECEIVED: 08/24/89 RUN NUMBER: 13533V27
DATE EXTRACTED: 09/06/89 SAMPLE AMOUNT: 5ML
DATE ANALYZED: 09/06/89 MATRIX: WATER

VOLATILE ORGANICS (EPA 624/8240) UNITS: UG/L (PPB)

CAS						
67-64-1 ACETONE ND 5. 71-43-2 BENZENE ND 1. 75-27-4 BROMODICHLOROMETHANE ND 1. 75-25-2 BROMOFORM ND 1. 74-83-9 BROMOMETHANE ND 5. 78-93-3 2-BUTANOME (MEK) ND 5. 75-15-0 CARBON DISULFIDE ND 1. 108-90-7 CHLOROBENZENE ND 1. 75-00-3 CHLOROETHANE ND 5. 110-75-8 2-CHLOROFORM 4. 1. 74-87-3 CHLOROFORM 4. 1. 74-87-3 CHLOROFORM 4. 1. 108-41-8 CHLOROTOLUENE ND 1. 124-48-1 DIBROMOCHLOROMETHANE ND 1. 124-48-1 DIBROMOCHLOROMETHANE ND 1. 55-50-1 1,2-DICHLOROBENZENE ND 1. 75-134-3 1,1-DICHLOROBENZENE ND 1. 75-35-4 1,1-DICHLOROETHANE			CONCENTRATION	DET LIMIT		
71-43-2 BENZENE			ND	5.		
75-27-4 BROMOFORM ND 1. 75-25-2 BROMOFORM ND 1. 74-83-9 BROMOMETHANE ND 5. 78-93-3 2-BUTANONE (MEK) ND 5. 75-15-0 CARBON DISULFIDE ND 1. 56-23-5 CARBON TETRACHLORIDE ND 1. 108-90-7 CHLOROBENZENE ND 5. 110-75-8 2-CHLOROETHYLVINYL ETHER ND 5. 110-75-8 2-CHLOROFORM 4. 1. 4-87-3 CHLOROTOLUENE ND 1. 108-41-8 CHLOROTOLUENE ND 1. 124-48-1 DI BROMOCHLOROMETHANE ND 1. 124-48-1 DI BROMOCHLOROMETHANE ND 1. 155-50-1 1,2-DICHLOROBENZENE ND 1. 106-46-7 1,4-DICHLOROBENZENE ND 1. 175-34-3 1,1-DICHLOROBENZENE ND 1. 107-06-2 1,2-DICHLOROETHALENE ND 1. 156-	71-43-2	BENZENE				
75-25-2 BROMOFORM ND 1. 74-83-9 BROMOMETHANE ND 5. 78-93-3 2-BUTANONE (MEK) ND 5. 75-15-0 CARBON DISULFIDE ND 1. 66-23-5 CARBON DISULFIDE ND 1. 108-90-7 CHLOROBENZENE ND 1. 75-00-3 CHLOROFTHANE ND 1. 110-75-8 2-CHLOROBETHAVUNYL ETHER ND 10. 67-66-3 CHLOROFORM 4. 1. 4-87-3 CHLOROFORM 4. 1. 4-87-3 CHLOROMETHANE ND 1. 108-41-8 CHLOROTOLUENE ND 1. 108-41-8 CHLOROFULHANE ND 1. 108-41-8 DIBROMOCHLOROMETHANE ND 1. 106-46-7 1,2-DICHLOROBENZENE ND 1. 106-46-7 1,4-DICHLOROBENZENE ND 1. 107-04-2 1,2-DICHLOROETHANE ND 1. 105-659-4 CI	75-27-4					
74-83-9 BROMOMETHANE ND 5. 78-93-3 2-BUTANONE (MEK) ND 5. 75-15-0 CARBON DISULFIDE ND 1. 56-23-5 CARBON TETRACHLORIDE ND 1. 108-90-7 CHLOROBERZENE ND 1. 75-00-3 CHLOROFTHYLVINYL ETHER ND 1. 110-75-8 2-CHLOROFTHYLVINYL ETHER ND 1. 67-66-3 CHLOROFORM 4. 1. 4-87-3 CHLOROFORM 4. 1. 108-41-8 CHLOROFORM ND 1. 124-48-1 DIBROMOCHLOROMETHANE ND 1. 124-48-1 DIBROMOCHLOROMETHANE ND 1. 154-73-1 1,3-DICHLOROBENZENE ND 1. 106-46-7 1,4-DICHLOROBENZENE ND 1. 107-06-2 1,2-DICHLOROETHANE ND 1. 107-06-2 1,2-DICHLOROETHYLENE ND 1. 156-69-4 CIS-1,2-DICHLOROETHYLENE ND 1.	75-25-2					
78-93-3 2-BUTANONE (MEK) ND 5. 75-15-0 CARBON DISULFIDE ND 1. 56-23-5 CARBON TETRACHLORIDE ND 1. 108-90-7 CHLOROBENZENE ND 1. 75-00-3 CHLOROFTHYLVINYL ETHER ND 5. 110-75-8 2-CHLOROBENYENE ND 10. 67-66-3 CHLOROFORM 4. 1. 74-87-3 CHLOROFORM 4. 1. 74-87-3 CHLOROGENZENE ND 1. 108-41-8 CHLOROGENZENE ND 1. 108-41-8 CHLOROGENZENE ND 1. 108-41-8 DIBROMOCHLOROMETHANE ND 1. 108-41-73-1 1,3-DICHLOROBENZENE ND 1. 75-34-3 1,1-DICHLOROETHANE ND 1. 107-06-2 1,2-DICHLOROETHYLENE ND 1. 156-80-3 TRANS-1,2-DICHLOROETHYLENE ND 1. 156-80-5 TRANS-1,3-DICHLOROETHYLENE ND 1. <tr< td=""><td>74-83-9</td><td></td><td></td><td></td></tr<>	74-83-9					
75-15-0 CARBON DISUÈTDE ND 1. 56-23-5 CARBON TETRACHLORIDE ND 1. 108-90-7 CHLOROBENZENE ND 1. 75-00-3 CHLOROFTHANE ND 5. 110-75-8 2-CHLOROFORM 4. 1. 74-87-3 CHLOROFORM 4. 1. 108-41-8 CHLOROTOLUENE ND 5. 108-41-8 CHLOROTOLUENE ND 1. 124-48-1 DIBROMOCHLOROMETHANE ND 1. 124-48-1 DIBROMOCHLOROMETHANE ND 1. 55-50-1 1,2-DICHLOROBENZENE ND 1. 541-73-1 1,3-DICHLOROBENZENE ND 1. 106-46-7 1,4-DICHLOROBENZENE ND 1. 107-06-2 1,2-DICHLOROBENZENE ND 1. 107-06-2 1,2-DICHLOROETHANE ND 1. 107-65-9-4 CIS-1,2-DICHLOROETHYLENE ND 1. 156-69-4 1,1-DICHLOROETHYLENE ND 1.						
56-23-5 CARBON TETRACHLORIDE ND 1. 108-90-7 CHLOROBENZENE ND 1. 75-00-3 CHLOROETHANE ND 5. 110-75-8 2-CHLOROETHYLVINYL ETHER ND 10. 67-66-3 CHLOROFORM 4. 1. 74-87-3 CHLOROTOLUENE ND 1. 108-41-8 CHLOROTOLUENE ND 1. 124-48-1 DIBROMOCHLOROMETHANE ND 1. 95-50-1 1,2-DICHLOROBENZENE ND 1. 541-73-1 1,3-DICHLOROBENZENE ND 1. 106-46-7 1,4-DICHLOROETHANE ND 1. 175-34-3 1,1-DICHLOROETHANE ND 1. 107-62-2 1,2-DICHLOROETHYLENE ND 1. 156-59-4 CIS-1,2-DICHLOROETHYLENE ND 1. 156-60-5 TRANS-1,2-DICHLOROETHYLENE ND 1. 156-60-5 TRANS-1,3-DICHLOROETHYLENE ND 1. 100-41-4 ETHYLBENGENE ND 1.						
108-90-7						
75-00-3 CHLOROETHANE ND 5. 110-75-8 2-CHLOROETHYLVINYL ETHER ND 10. 67-66-3 CHLOROFORM 4. 1. 74-87-3 CHLOROMETHANE ND 5. 108-41-8 CHLOROTOLUENE ND 1. 124-48-1 DIBROMOCHLOROMETHANE ND 1. 95-50-1 1,2-DICHLOROBENZENE ND 1. 541-73-1 1,3-DICHLOROBENZENE ND 1. 106-46-7 1,4-DICHLOROBENZENE ND 1. 75-34-3 1,1-DICHLOROETHANE ND 1. 107-06-2 1,2-DICHLOROETHANE ND 1. 156-59-4 1,1-DICHLOROETHYLENE ND 1. 156-60-5 TRANS-1,2-DICHLOROETHYLENE ND 1. 156-60-5 TRANS-1,2-DICHLOROETHYLENE ND 1. 10061-01-5 CIS-1,3-DICHLOROPROPENE ND 1. 103-1-4 ETHYLENEZENE ND 1. -93-4 ETHYLENE DIBROMIDE ND 1.	108-90-7					
110-75-8 2-CHLOROETHYLVINYL ETHER						
67-66-3 CHLOROFORM 4. 1. 74-87-3 CHLOROMETHANE ND 5. 108-41-8 CHLOROTOLUENE ND 1. 124-48-1 DIBROMOCHLOROMETHANE ND 1. 95-50-1 1,2-DICHLOROBENZENE ND 1. 106-46-7 1,4-DICHLOROBENZENE ND 1. 107-06-2 1,2-DICHLOROETHANE ND 1. 107-06-2 1,2-DICHLOROETHANE ND 1. 156-59-4 1,1-DICHLOROETHYLENE ND 1. 156-69-5 TRANS-1,2-DICHLOROETHYLENE ND 1. 156-60-5 TRANS-1,2-DICHLOROETHYLENE ND 1. 156-60-5 TRANS-1,3-DICHLOROETHYLENE ND 1. 10061-01-5 CIS-1,3-DICHLOROETHYLENE ND 1. 103-1-4 ETHYLENE DIBROMIDE ND 1. 103-1-4 ETHYLENE DIBROMIDE ND 1. 103-1 FREON-TF ND 1. 103-9-2 METHYLENE CHLORIDE ND 5. </td <td></td> <td></td> <td></td> <td></td>						
74-87-3 CHLOROMETHANE ND 5. 108-41-8 CHLOROTOLUENE ND 1. 124-48-1 DIBROMOCHLOROMETHANE ND 1. 95-50-1 1,2-DICHLOROBENZENE ND 1. 541-73-1 1,3-DICHLOROBENZENE ND 1. 106-46-7 1,4-DICHLOROBENZENE ND 1. 107-06-2 1,2-DICHLOROETHANE ND 1. 156-59-4 1,2-DICHLOROETHYLENE ND 1. 156-59-4 1,1-DICHLOROETHYLENE ND 1. 156-60-5 TRANS-1,2-DICHLOROETHYLENE ND 1. 10061-01-5 CIS-1,3-DICHLOROPROPENE ND 1. 10061-01-5 CIS-1,3-DICHLOROPROPENE ND 1. 107-41-4 ETHYLENE DIBROMIDE ND 1. 107-41-4 ETHYLENE DIBROMIDE ND 1. 3-1 FREON-TF ND 5. 108-9-9 METHYLENE CHLORIDE ND 5. 108-10-1 4-METHYLENE CHLORIDE ND						
108-41-8 CHLOROTOLUENE ND 1. 124-48-1 DIBROMOCHLOROMETHANE ND 1. 95-50-1 1,2-DICHLOROBENZENE ND 1. 541-73-1 1,3-DICHLOROBENZENE ND 1. 106-46-7 1,4-DICHLOROETHANE ND 1. 107-06-2 1,2-DICHLOROETHANE ND 1. 107-06-2 1,2-DICHLOROETHYLENE MD 1. 156-59-4 CIS-1,2-DICHLOROETHYLENE ND 1. 156-60-5 TRANS-1,2-DICHLOROETHYLENE ND 1. 156-60-5 TRANS-1,2-DICHLOROPROPANE ND 1. 10061-01-5 CIS-1,3-DICHLOROPROPENE ND 1. 100-10-5 CIS-1,3-DICHLOROPROPENE ND 1. 100-10-5 CIS-1,3-DICHLOROPROPENE ND 1. 101-10-6 TRANS-1,2-DICHLOROPROPENE ND 1. 103-10-1 ETHYLENE DIBROMIDE ND 1. 103-1 FREON-TF ND 1. 103-1 TRANS-1,2-DICHLOROPROPANE						
124-48-1 DIBROMOCHLOROMETHANE ND 1. 95-50-1 1,2-DICHLOROBENZENE ND 1. 541-73-1 1,3-DICHLOROBENZENE ND 1. 106-46-7 1,4-DICHLOROBENZENE ND 1. 75-34-3 1,1-DICHLOROETHANE ND 1. 107-06-2 1,2-DICHLOROETHYLENE ND 1. 156-59-4 CIS-1,2-DICHLOROETHYLENE ND 1. 156-60-5 TRANS-1,2-DICHLOROETHYLENE ND 1. 1061-01-5 CIS-1,3-DICHLOROPROPANE ND 1. 1061-02-6 TRANS-1,3-DICHLOROPROPENE ND 1. 1061-02-6 TRANS-1,3-DICHLOROPROPENE ND 1. 107-41-4 ETHYLENE DIBROMIDE ND 1. 107-41-4 ETHYLENE DIBROMIDE ND 1. 103-1 FREON-TF ND 1. 103-1 FREON-TF ND 5. 103-9-2 METHYLENE CHLORIDE ND 5. 103-10-1 4-METHYL-2-PENTANONE (MIBK) ND 5. 109-99-9 TETRAHYDROFURAN ND <t< td=""><td></td><td></td><td></td><td></td></t<>						
95-50-1 1,2-DICHLOROBENZENE ND 1. 541-73-1 1,3-DICHLOROBENZENE ND 1. 106-46-7 1,4-DICHLOROBENZENE ND 1. 75-34-3 1,1-DICHLOROETHANE ND 1. 107-06-2 1,2-DICHLOROETHYLENE ND 1. 156-59-4 CIS-1,2-DICHLOROETHYLENE ND 1. 156-60-5 TRANS-1,2-DICHLOROETHYLENE ND 1. 1066-0-5 TRANS-1,3-DICHLOROPROPENE ND 1. 10961-01-5 CIS-1,3-DICHLOROPROPENE ND 1. 1051-02-6 TRANS-1,3-DICHLOROPROPENE ND 1. 109-41-4 ETHYLENE DIBROMIDE ND 1. 109-41-4 ETHYLENE DIBROMIDE ND 1. 103-1 FREON-TF ND 1. 103-1 FREON-TF ND 1. 103-1 FREON-TF ND 1. 103-1 FREON-TF ND 5. 103-1 FREON-TF ND 1. 103-1 FREON-TF ND 5. 103-1 <td< td=""><td></td><td></td><td></td><td></td></td<>						
541-73-1 1,3-DICHLOROBENZENE ND 1. 106-46-7 1,4-DICHLOROBENZENE ND 1. 75-34-3 1,1-DICHLOROETHANE ND 1. 107-06-2 1,2-DICHLOROETHYLENE ND 1. 75-35-4 1,1-DICHLOROETHYLENE MD 1. 156-59-4 CIS-1,2-DICHLOROETHYLENE ND 1. 156-60-5 TRANS-1,2-DICHLOROETHYLENE ND 1. 156-60-5 TRANS-1,2-DICHLOROETHYLENE ND 1. 10061-01-5 CIS-1,3-DICHLOROPROPANE ND 1. 10061-02-6 TRANS-1,3-DICHLOROPROPENE ND 1. 101-1 ETHYLENE DIBROMIDE ND 1. 101-4-41-4 ETHYLENE DIBROMIDE ND 1. 1-3-1 FREON-TF ND 1. 13-1 FREON-TF ND 1. 13-6 2-HEXANONE ND 5. 103-9-2 METHYLENE CHLORIDE ND 5. 100-42-5 STYRENE ND 1. 127-18-4 TETRACHLOROETHANE ND 1.						
106-46-7 1,4-DICHLOROBENZENE ND 1. 75-34-3 1,1-DICHLOROETHANE ND 1. 107-06-2 1,2-DICHLOROETHANE ND 1. 75-35-4 1,1-DICHLOROETHYLENE ND 1. 156-59-4 CIS-1,2-DICHLOROETHYLENE ND 1. 156-60-5 TRANS-1,2-DICHLOROETHYLENE ND 1. 10061-01-5 CIS-1,3-DICHLOROPROPENE ND 1. 10061-01-5 CIS-1,3-DICHLOROPROPENE ND 1. 100-14-4 ETHYLENZENE ND 1. 100-2-6 TRANS-1,3-DICHLOROPROPENE ND 1. 100-41-4 ETHYLENZENE ND 1. 100-41-4 ETHYLENE DIBROMIDE ND 1. 100-93-4 ETHYLENE DIBROMIDE ND 1. 103-1 FREON-TF ND 5. 103-9-2 METHYLENE CHLORIDE ND 5. 103-10-1 4-METHYL-2-PENTANONE (MIBK) ND 5. 103-10-1 4-METHYL-2-PENTANONE (MIBK) ND 1. 100-42-5 STYRENE ND 1. </td <td></td> <td></td> <td></td> <td></td>						
75-34-3 1,1-DICHLOROETHANE ND 1. 107-06-2 1,2-DICHLOROETHANE ND 1. 75-35-4 1,1-DICHLOROETHYLENE ND 1. 156-59-4 CIS-1,2-DICHLOROETHYLENE ND 1. 156-60-5 TRANS-1,2-DICHLOROETHYLENE ND 1. 78-87-5 1,2-DICHLOROPROPANE ND 1. 10061-01-5 CIS-1,3-DICHLOROPROPENE ND 1. 107-41-4 ETHYLBENZENE ND 1. 107-41-4 ETHYLBEND DIBROMIDE ND 1. 107-41-4 ETHYLENE DIBROMIDE ND 1. 107-3-4 ETHYLENE DIBROMIDE ND 1. 107-3-4 ETHYLENE CHLORIDE ND 5. 108-10-1 4-METHYL-2-PENTANONE (MIBK) ND 5. 108-10-1 4-METHYL-2-PENTANONE (MIBK) ND 5. 109-34-5 1,1,2,2-TETRACHLOROETHANE ND 1. 127-18-4 TETRACHLOROETHYLENE ND 1. 108-88-3 TOLUENE <						
107-06-2 1,2-DICHLOROETHANE ND 1. 75-35-4 1,1-DICHLOROETHYLENE 4. 1. 156-59-4 CIS-1,2-DICHLOROETHYLENE ND 1. 156-60-5 TRANS-1,2-DICHLOROETHYLENE ND 1. 78-87-5 1,2-DICHLOROPROPANE ND 1. 10061-01-5 CIS-1,3-DICHLOROPROPENE ND 1. 105-41-4 ETHYLENE J.3-DICHLOROPROPENE ND 1. 107-41-4 ETHYLENE DIBROMIDE ND 1. -93-4 ETHYLENE DIBROMIDE ND 1. -33-1 FREON-TF ND 1. -33-1 FREON-TF ND 1. -33-2 METHYLENE CHLORIDE ND 5. 108-10-1 4-METHYL-2-PENTANONE (MIBK) ND 5. 108-10-1 4-METHYL-2-PENTANONE (MIBK) ND 1. 179-34-5 1,1,2,2-TETRACHLOROETHANE ND 1. 109-99-9 TETRAHYDROFURAN ND 5. 108-88-3 TOLUENE ND 1. 79-00-5 1,1,2-TRICHLOROETHANE ND 1. <td></td> <td></td> <td></td> <td></td>						
75-35-4 1,1-DICHLOROETHYLENE 4. 1. 156-59-4 CIS-1,2-DICHLOROETHYLENE ND 1. 156-60-5 TRANS-1,2-DICHLOROETHYLENE ND 1. 1061-01-5 CIS-1,3-DICHLOROPROPANE ND 1. 10061-01-5 CIS-1,3-DICHLOROPROPENE ND 1. 10061-02-6 TRANS-1,3-DICHLOROPROPENE ND 1. 100-41-4 ETHYLBENZENE ND 1. 100-41-4 ETHYLENE DIBROMIDE ND 1. 13-1 FREON-TF ND 1. 108-10-1 4-METHYLENE CHLORIDE ND 5. 108-10-1 4-METHYLENE CHLORIDE ND 1. 127-18-4 TETRACHLOROETHYLENE ND 1. 109-99-9 TETRAHYDROFURAN <td></td> <td></td> <td></td> <td></td>						
156-59-4 CIS-1,2-DICHLOROETHYLENE						
156-60-5 TRANS-1,2-DICHLOROETHYLENE ND 1. 78-87-5 1,2-DICHLOROPROPANE ND 1. 10061-01-5 CIS-1,3-DICHLOROPROPENE ND 1. 1-51-02-6 TRANS-1,3-DICHLOROPROPENE ND 1. 100-41-4 ETHYLBENZENE ND 1. 1-93-4 ETHYLENE DIBROMIDE ND 1. 13-1 FREON-TF ND 1. 13-1 FREON-TF ND 1. 13-1 FREON-TF ND 1. 13-1 FREON-TF ND 5. 103-9-2 METHYLENE CHLORIDE ND 5. 108-10-1 4-METHYL-2-PENTANONE (MIBK) ND 5. 100-42-5 STYRENE ND 1. 79-34-5 1,1,2,2-TETRACHLOROETHANE ND 1. 109-99-9 TETRAHYDROFURAN ND 5. 108-88-3 TOLUENE ND 1. 79-00-5 1,1,1-TRICHLOROETHANE ND 1. 79-00-5 1,1,2-TRICHLOROETHANE ND 1. 75-69-4 TRICHL						
78-87-5 1,2-DICHLOROPROPANE ND 1. 10061-01-5 CIS-1,3-DICHLOROPROPENE ND 1. 1-51-02-6 TRANS-1,3-DICHLOROPROPENE ND 1. 100-41-4 ETHYLBENZENE ND 1. 1-93-4 ETHYLENE DIBROMIDE ND 1. 13-1 FREON-TF ND 1. 13-1 FREON-TF ND 5. 13-3-6 2-HEXANONE ND 5. 103-99-2 METHYLENE CHLORIDE ND 5. 108-10-1 4-METHYL-2-PENTANONE (MIBK) ND 5. 100-42-5 STYRENE ND 1. 79-34-5 1,1,2,2-TETRACHLOROETHANE ND 1. 127-18-4 TETRACHLOROETHYLENE ND 1. 109-99-9 TETRAHYDROFURAN ND 1. 17-55-6 1,1,1-TRICHLOROETHANE ND 1. 79-00-5 1,1,2-TRICHLOROETHYLENE 81. 1. 79-01-6 TRICHLOROETHYLENE 81. 1. 75-69-4 TRICHLOROETHYLENE ND 5. 75-01-						
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75-01-4 VINYL CHLORIDE ND 5.						
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95-47-6 TOTAL XYLENES ND 1.			ND	5.		
	95 -47-6	TOTAL XYLENES	ND	1.		

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: WCC-10S-2A

WCAS JOB #: 13533

UNITS: UG/L (PPB)

APPROXIMATE

COMPOUND NAME

FRACTION CONCENTRATION

1 NONE FOUND

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: WCC-10S-2R

WCAS JOB #: 13533

 DATE RECEIVED:
 08/24/89
 RUN NUMBER:
 13533V28

 DATE EXTRACTED:
 09/06/89
 SAMPLE AMOUNT:
 5ML

 DATE ANALYZED:
 09/06/89
 MATRIX:
 WATER

VOLATILE ORGANICS (EPA 624/8240) UNITS: UG/L (PPB)

CAS #	COMPOUND	CONCENTRATION				
67-64-1	ACETONE	ND	5.			
71-43-2	BENZENE	ND	1.			
75-27-4	BROMODICHLOROMETHANE	ND	1.			
75-25-2	BROMOFORM	ND	î.			
74-83-9	BROMOMETHANE	ND	5.			
78-93-3	2-BUTANONE (MEK)	ND	5.			
75-15-0	CARBON DISULFIDE	ND	1.			
56-23-5	CARBON TETRACHLORIDE	ND	1.			
108-90-7	CHLOROBENZENE	ND	1.			
75-00-3	CHLOROETHANE	ND	5.			
110-75-8	2-CHLOROETHYLVINYL ETHER	ND	10.			
67-66-3	CHLOROFORM	ND	1.			
74-87-3	CHLOROMETHANE	ND	5.			
108-41-8		ND	1.			
124-48-1	DIBROMOCHLOR THANE	ND	1.			
95-50-1	1,2-DICHLORO DE ZENE	ND	1.			
541-73-1	1,3-DICHLOROBENZENE	ND	1.			
106-46-7	1,4-DICHLOROBENZENE	ND	1.			
75-34-3	1,1-DICHLOROETHANE	ND	1.			
107-06-2	1,2-DICHLOROETHANE	ND				
75-35-4	1,1-DICHLOROETHYLENE		1.			
156-59-4	CIS-1,2-DICHLOROETHYLENE	ND	1.			
156-60-5	TRANS-1,2-DICHLOROETHYLENE	ND	1.			
78-87-5	1,2-DICHLOROPROPANE	ND	1.			
10061-01-5	CIS-1,3-DICHLOROPROPENE	ND	1.			
10061-02-6	TRANS-1,3-DICHLOROPROPENE	ND	1.			
100-41-4	ETHYLBENZENE	ND	1.			
106-93-4	ETHYLENE DIBROMIDE	ND	1.			
75-13-1	FREON-TF	ND	1.			
119-78-6		ND	1.			
75-09-2	2-HEXANONE	ND	5.			
108-10-1	METHYLENE CHLORIDE	ND	5.			
100-42-5	4-METHYL-2-PENTANONE (MIBK)	ND	5.			
	STYRENE	ND	1.			
79-34-5	1,1,2,2-TETRACHLOROETHANE	ND	1.			
127-18-4	TETRACHLOROETHYLENE	ND	1.			
109-99-9	TETRAHYDROFURAN	ND	5.			
108-88-3	TOLUENE	ND	1.			
71-55-6	1,1,1-TRICHLOROETHANE	ND	1.			
79-00-5	1,1,2-TRICHLOROETHANE	ND	1.			
79-01-6	TRICHLOROETHYLENE	ND	1.			
75-69-4	TRICHLOROFLUOROMETHANE	ND	1.			
108-05-4	VINYL ACETATE	ND	5.			
75-01-4	VINYL CHLORIDE	ND	5.			
95-47-6	TOTAL XYLENES	ND	1.			

CLIENT: WOODWARD-CLYDE CONSULTANTS

WCAS JOB #: 13533

SAMPLE: WCC-10S-2R

UNITS: UG/L (PPB)

APPROXIMATE

COMPOUND NAME FRACTION CONCENTRATION

i,

1 NONE FOUND

Data Reporting Qualifiers

- Value If the result is a value greater than or equal to the Detection Limit (DL), the value is reported.
- ND Indicates that the compound was analyzed for but not detected. The minimum DL for the sample with the ND is reported based on necessary concentration or dilution actions.
- TR Indicates an estimated value. This flag is used when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified DL but greater than zero.

Woodward-Clyde Consultants



CHAIN OF CUSTODY RECORD

SHIPMENT	NO.:	
PAGE_	_OF_	3

PROJECT NO .: 8741263 J - TUSK (C6) DATE 8 12129

Sample Number	Location	Type of		Type of	Container		of Prese		Analysis	Required
		Material	Method		40 mg VOA			mical	-	
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NCC-15-2R				40 AG	AUN D			<u> </u>	_	
wcc-15-25	- V			4					ļ	
VCC-25-2A	wec 25			1 1						
100-25-2B				4)						
NCC-25-2C				4 2	glass			<u>L</u>		
NCC-25-2R	,			40 AL	LOV					
WCC-25-25				1 1						
NCC-35-2A				, 3						
NCC-35-2B	,			7				1		
NCC-35-2C	F			4 02.	glase					
vcc-35-22				40 ML.	Addi				1	*****
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WCC-45-2A					}	t - t -	 			
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* Note - This does not constitute authorization to proceed with analysis

LA/OR-0183-421

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Woodward-Clyde Consultants



SHIPMENT NO .:_____

PAGE 2 OF 3

CHAIN OF CUSTODY RECORD

PROJECT NAME: Duglas A-coaft Co. (CG) DATE 8/23/89

PROJECT NO.: 894/863) - TASK 1

Sample Number	Location	Type of S	ample	Type of	Container		Туре	of Preservati	on	Analysis	Required *
Sample Number	Location	Material	Method	Type of	40minus	Te	mp	Chemica	l	7 (1741) 313	
WCC-55-2A	wcc-5s	NO WATER	PAILER	- 3	STATE!		ا عَدَ	NUNE			
WCC-55-28		1									
WCC-55-20				Aoz.	glass.						
WCC-55-22				40 2	AGV						
wcc-55-25				1 9							
WCC-75-2A					•						
WCC-75-26				1	{						
wcc-75-2c				4 07.	glass						
WCE-75 -2R	, 1			and	RVOA						
NCC-75-25	1			70.62	Y						
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WCC-85-2A		 			} 	\vdash	11				
WCC- 35-28	· · · · · · · · · · · · · · · · · · ·	 		4	Y ahss	\vdash	1				
Mcc-32-30	[/ [4 02.						 	
WCC-32-26		 		AON	A WA	-	-				
40C-35-25		 			7	├-		 		ļ	
WCC-105-2A		 -			4	 	+				
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wcc -65-2c					Juless	ļ	1				
WCC-105-2R				40, le	ACV &	<u> </u>	ļ	ļ		<u> </u>	
WCC - 105 -25	. V	<u> </u>	,	<u> </u>	78			V		<u> </u>	
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* Note - This does not constitute authorization to proceed with analysis

LA, OR -0183-421

		Woo	dward-	Clyde Consulta	ants 🖥	SHIPM	ENT NO.:	
				CUSTODY RECO			<u>3</u> _of_	,
	PROJEC	CT NAME:_	Dugla	c Ai-craft	C٥.	(C6) DATE	8 123	189
	PROJEC	CT NO.:	894186	3.1 - TOSK	1			
Sample Number	Location	Type of Material	Sample Method	Type of Container	Type (of Preservation Chemical	Analysis	Required *
WCC-10-24	اسحد-ا0	WITEX	BoiLER	40 M VOA	ICE	ME		
MCC-17-28	1 . 1			V				
wcc-10-20	1 I			4 oz. glass				
wcc-10.25				- C WA				
INCC - 3D - 2A	ĭ							
WCC-3D-2B				4 oz. glass				
wec-30-2R				40 Me VOA		 ,		
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RECEIVED

September 29, 1989

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WCC-SANTA ANA

WEST COAST ANALYTICAL SERVICE, INC.

ANALYTICAL CHEMISTS

Α

Attn:

Dr. Alistaire Callender

JOB NO.

13764

WOODWARD-CLYDE CONSULTANTS

203 N. Golden Circle Drive

Santa Ana, CA 92705

LABORATORY REPORT

Samples Received: Thirteen (13) soils

Date Received: 9-25-89

Purchase Order No: Proj#: 8941863J-I/Douglas Aircraft

The samples were analyzed as follows:

Samples Analyzed

<u>Analysis</u>

Results

Three (3) soils

Volatile Organics

by EPA 8240

Data Sheets

Page 1 of 1

B. Michael Hovanec Senior Staff Chemist

Northington, Ph.D. Technical Director

9840 Alburtis Avenue • Santa Fe Springs, California 90670 • 213/948-2225 • FAX 213.948-5850

CLIENT: WOODWARD-CLYDE RECEIVE AMPLE: 6S-8-4

WCAS JOB #: 13764

OCT 0 4 (91)

DATE RECEIVED: 09/25/89
DATE EXTRACTED: 09/29/89
DATE ANALYZED: 09/29/89
WCC-SANTA ANARUN NUMBER: 13764V4
SAMPLE AMOUNT: 0.1G
MATRIX: SOIL

VOLATILE ORG	GANICS (EPA 624/8240)	UNITS: UG/K	G (PPB)
CAS #	COMPOUND	CONCENTRATION	DET LIMIT
67-64-1	ACETONE	ND	300.
71-43-2	BENZENE	ND	50.
75-27-4	BROMODICHLOROMETHANE	ND	50.
75-25-2	BROMOFORM	ND	50.
74-83-9	BROMOMETHANE	ND	300.
78-93-3	2-BUTANONE (MEK)	9400.	300.
75-15-0	CARBON DISULFIDE	ND	50.
56-23-5	CARBON TETRACHLORIDE	ND	50.
108-90-7	CHLOROBENZENE	ND	50.
75-00-3	CHLOROETHANE	ND	300.
110-75-8	2-CHLOROETHYLVINYL ETHER	ND	500.
67-66-3	CHLOROFORM	ND	50.
74-87-3	CHLOROMETHANE	ND	300.
108-41-8	CHLOROTOLUENE	ND	50.
124-48-1	DIBROMOCHLOROMETHANE	ND	50.
95-50-1	1,2-DICHLOROBENZENE	ND	50.
541-73-1	1,3-DICHLOROBENZENE	ND	50.
106-46-7	1,4-DICHLOROBENZENE	ND	50.
75-34-3	1,1-DICHLOROETHANE	ND ND	50.
107-06-2	1,2-DICHLOROETHANE	ND	
75-35-4	1,1-DICHLOROETHYLENE	ND	50.
156-59-4	CIS-1,2-DICHLOROETHYLENE		50.
156-60-5	TRANS-1,2-DICHLOROETHYLENE	ND	50.
78-87-5	1,2-DICHLOROPROPANE	ND	50.
10061-01-5	CIS-1,3-DICHLOROPROPENE	ND	50.
10061-02-6	TRANS-1,3-DICHLOROPROPENE	ND	50.
100-41-4	ETHYLBENZENE	ND	50.
106-93-4	ETHYLENE DIBROMIDE	ND	50.
76-13-1	FREON-TF	ND	50.
119-78-6	2-HEXANONE	ND	50.
75-09-2	METHYLENE CHLORIDE	ND	300.
108-10-1	4-METHYL-2-PENTANONE (MIBK)	ND	300.
100-42-5	STYRENE (MIBK)	8400.	300.
79-34-5		ND	50.
127-18-4	1,1,2,2-TETRACHLOROETHANE	ND	50.
109-99-9	TETRACHLOROETHYLENE	ND	50.
109-99-9	TETRAHYDROFURAN	ND	300.
71-55-6	TOLUENE	1000.	50.
79-00-5	1,1,1-TRICHLOROETHANE	ND	50.
79-00-5	1,1,2-TRICHLOROETHANE	ND	50.
	TRICHLOROETHYLENE	ND	50.
75-69-4	TRICHLOROFLUOROMETHANE	ND	50.
108-05-4	VINYL ACETATE	ND	300.
75-01-4	VINYL CHLORIDE	ND	300.
95-47-6	TOTAL XYLENES	ND	50.

CLIENT: WOODWARD-CLYDE

SAMPLE: 6S-8-4

WCAS JOB #: 13764

UNITS: UG/KG (PPB)

APPROXIMATE

COMPOUND NAME FRACTION CONCENTRATION

1 BUTYL CELLOSOLVE

VOA 300.

CLIENT: WOODWARD-CLYDE SAMPLE: 6S-9-4

WCAS JOB #: 13764

DATE RECEIVED: 09/25/89 RUN NUMBER: 13764V2
DATE EXTRACTED: 09/29/89 SAMPLE AMOUNT: 0.1G
DATE ANALYZED: 09/29/89 MATRIX: SOIL

VOLATILE ORGANICS (EPA 624/8240) UNITS: UG/KG (PPB)

	, , ,				
CAS #	COMPOUND	CONCENTRATION			
67-64-1	ACETONE	ND	300.		
71-43-2	BENZENE	ND	50.		
75-27-4	BROMODICHLOROMETHANE	ND	50.		
75-25-2	BROMOFORM	ND	50.		
74-83-9	BROMOMETHANE	ND	300.		
78-93-3	2-BUTANONE (MEK)	9200.	300.		
75-15-0	CARBON DISULFIDE	ND	50.		
56-23-5	CARBON TETRACHLORIDE	ND	50.		
108-90-7	CHLOROBENZENE	ND	50.		
75-00-3	CHLOROETHANE	ND	300.		
110-75-8	2-CHLOROETHYLVINYL ETHER	ND	500.		
67-66-3	CHLOROFORM	ND	50:		
74-87-3	CHLOROMETHANE	ND	300.		
108-41-8	CHLOROTOLUENE	ND	50.		
124-48-1	DIBROMOCHLOROMETHANE	ND	50.		
95-50-1	1,2-DICHLOROBENZENE	ND	50.		
541-73-1	1,3-DICHLOROBENZENE	ND	50.		
106-46-7	1,4-DICHLOROBENZENE	ND	50.		
75-34-3	1,1-DICHLOROETHANE	ND	50.		
107-06-2	1,2-DICHLOROETHANE	ND	50.		
75-35-4	1,1-DICHLOROETHYLENE	240.	50.		
156-59-4	CIS-1,2-DICHLOROETHYLENE	ND	50.		
156-60-5	TRANS-1,2-DICHLOROETHYLENE	ND	50.		
78-87-5	1,2-DICHLOROPROPANE	ND	50.		
10061-01-5	CIS-1,3-DICHLOROPROPENE	ND	50.		
10061-02-6	TRANS-1,3-DICHLOROPROPENE	ND	50.		
100-41-4	ETHYLBENZENE	ND	50.		
106-93-4	ETHYLENE DIBROMIDE	ND	50.		
76-13-1	FREON-TF	ND	50.		
119-78-6	2-HEXANONE	ND	300.		
75-09-2	METHYLENE CHLORIDE	ND	300.		
108-10-1	4-METHYL-2-PENTANONE (MIBK)	2500.	300.		
100-42-5	STYRENE	ND	50.		
79-34-5	1,1,2,2-TETRACHLOROETHANE	ND	50.		
127-18-4	TETRACHLOROETHYLENE	ND	50.		
109-99-9	TETRAHYDROFURAN	ND	300.		
108-88-3	TOLUENE	2200.	50.		
71-55-6	1,1,1-TRICHLOROETHANE	ND	50.		
79-00-5	1,1,2-TRICHLOROETHANE	ND	50.		
79-01-6	TRICHLOROETHYLENE	83.	50.		
75-69-4	TRICHLOROFLUOROMETHANE	ND	50.		
108-05-4	VINYL ACETATE	ND	300.		
75-01-4	VINYL CHLORIDE	ND	300.		
95-47-6	TOTAL XYLENES				
JJ 47 U	TOTUL VIHINID	ND	50.		

CLIENT: WOODWARD-CLYDE

SAMPLE: 6S-9-4

WCAS JOB #: 13764

UNITS: UG/KG (PPB)

APPROXIMATE

COMPOUND NAME

FRACTION CONCENTRATION

1 BUTYL CELLOSOLVE

VOA 700.

CLIENT: WOODWARD-CLYDE SAMPLE: 6S-10-4

WCAS JOB #: 13764

DATE RECEIVED: 09/25/89

DATE EXTRACTED: 09/29/89

DATE ANALYZED: 09/29/89

RUN NUMBER: 13764V1

SAMPLE AMOUNT: 1.0G

MATRIX: SOIL

VOLATILE ORGANICS (EPA 624/8240) UNITS: UG/KG (PPB)

	0200 (21.11 024) 0240)	UNITS: UG/K	G (BBB)
CAS #	COMPOUND	CONCENTRATION	DET LIMIT
67-64-1	ACETONE	ND	======= 30.
71-43-2	BENZENE	ND	5.
75-27-4	BROMODICHLOROMETHANE	ND	5.
75-25-2	BROMOFORM	ND	5.
74-83-9	BROMOMETHANE	ND	30.
78-93-3	2-BUTANONE (MEK)	550.	30.
75-15-0	CARBON DISULFIDÉ	ND	5.
56-23-5	CARBON TETRACHLORIDE	ND	5.
108-90-7	CHLOROBENZENE	ND	5.
75-00-3	CHLOROETHANE	ND	30.
110-75-8	2-CHLOROETHYLVINYL ETHER	ND	50.
67-66-3	CHLOROFORM	ND	5.
74-87-3	CHLOROMETHANE	ND	30.
108-41-8	CHLOROTOLUENE	ND	5.
124-48-1	DIBROMOCHLOROMETHANE	ND	5.
95-50-1	1,2-DICHLOROBENZENE	ND	5.
541-73-1	1,3-DICHLOROBENZENE	ND	5.
106-46-7	1,4-DICHLOROBENZENE	ND	5.
75-34-3	1,1-DICHLOROETHANE	ND	5.
107-06-2	1,2-DICHLOROETHANE	ND	5.
75-35-4	1,1-DICHLOROETHYLENE	ND	5.
156-59-4	CIS-1,2-DICHLOROETHYLENE	ND	5.
156-60-5	TRANS-1,2-DICHLOROETHYLENE	ND	5.
78-87-5	1,2-DICHLOROPROPANE	ND	5.
10061-01-5	CIS-1,3-DICHLOROPROPENE	ND	5.
10061-02-6	TRANS-1,3-DICHLOROPROPENE	ND	5.
100-41-4	ETHYLBENZENE	ND	5.
106-93-4	ETHYLENE DIBROMIDE	ND	5.
76-13-1	FREON-TF	ND	5.
119-78-6	2-HEXANONE	ND	30.
75-09-2	METHYLENE CHLORIDE	ND	30.
108-10-1	4-METHYL-2-PENTANONE (MIBK)	330.	30.
100-42-5	STYRENE	ND	5.
79-34-5	1,1,2,2-TETRACHLOROETHANE	ND	5.
127-18-4	TETRACHLOROETHYLENE	ND	5.
109-99-9	TETRAHYDROFURAN	ND	30.
108-88-3	TOLUENE	150.	5.
71-55-6	1,1,1-TRICHLOROETHANE	ND	5.
79-00-5	1,1,2-TRICHLOROETHANE	ND	5.
79-01-6	TRICHLOROETHYLENE	7.	
75-69-4	TRICHLOROFLUOROMETHANE	ND	5. 5.
108-05-4	VINYL ACETATE	ND	
75-01-4	VINYL CHLORIDE		30.
95-47-6	TOTAL XYLENES	ND	30.
	TOTHE WITHHEID	ND	5.

CLIENT: WOODWARD-CLYDE WCAS JOB #: 13764

SAMPLE: 6S-10-4

UNITS: UG/KG (PPB)

APPROXIMATE

COMPOUND NAME

FRACTION CONCENTRATION

1 NONE FOUND

Data Reporting Qualifiers

- Value If the result is a value greater than or equal to the Detection Limit (DL), the value is reported.
- ND Indicates that the compound was analyzed for but not detected. The minimum DL for the sample with the ND is reported based on necessary concentration or dilution actions.
- TR Indicates an estimated value. This flag is used when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified DL but greater than zero.



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Woodward-Clyde Consultants



SHIPME T NO .:____

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CHAIN OF CUSTODY RECORD

PAGE____OF___/

WCC-SANTA ANA

PROJECT NAME: DOUGLAS A. RCRAFT CO. DATE 9 125789 PROJECT NO: 894. 863.T

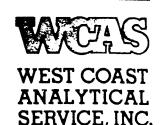
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LA/OR-0183-421

October 18, 1989

RECEIVED

OCT 1 9 1320 WCC-SANTA ANA



WOODWARD-CLYDE CONSULTANTS 203 N. Golden Circle Dr. Santa Ana, CA 92705

Attn:

Dr. Alistaire Callender

JOB NO.

13882

LABORATORY REPORT

Samples Received: Three (3) liquids in quadruplicate

Date Received: 10-9-89

Date Released for Analysis: 10-11-89

Purchase Order No: Proj#: 8941863J/Douglas Aircraft

The samples were analyzed as follows:

Samples Analyzed

<u>Analysis</u>

Results

Three (3) liquids

Volatile Organics

by EPA 624

Data Sheets

Page 1 of 1

Michael Shelton Senior Chemist

J. Northington, Ph.D. Technical Director

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: WCC-6S-1A

WCAS JOB #: 13882

DATE RECEIVED: 10/09/89 RUN NUMBER: 13882V5 DATE EXTRACTED: 10/17/89 SAMPLE AMOUNT: 5ML DATE ANALYZED: 10/17/89 MATRIX: WATER

VOLATILE ORGANICS (EPA 624/8240) UNITS: UG/L (PPB)

	•					
CAS # ========	COMPOUND	CONCENTRATION	DET LIMIT			
67-64-1	ACETONE	**====================================				
71-43-2	BENZENE	ND	5.			
75-27-4	BROMODICHLOROMETHANE	ND	1.			
75-25-2	BROMOFORM	ND	1.			
74-83-9	BROMOMETHANE	ND	1.			
78-93-3	2-BUTANONE (MEK)	ND	5 .			
75-15-0	CARBON DISULFIDE	ND	5.			
56-23-5	CARBON TETRACHLORIDE	ND	1.			
108-90-7	CHLOROBENZENE	ND	1.			
75-00-3	CHLOROETHANE	ND	1.			
110-75-8	2-CHLOROETHYLVINYL ETHER	ND	5.			
67-66-3	CHLOROFORM	ND	10.			
74-87-3	CHLOROMETHANE	ND	1.			
108-41-8	CHLOROTOLUENE	ND	5.			
124-48-1	DIBROMOCHLOROMETHANE	ND	1.			
95-50-1	1,2-DICHLOROBENZENE	ND	1.			
541-73-1		ND	1.			
106-46-7	1,3-DICHLOROBENZENE 1,4-DICHLOROBENZENE	ND	1.			
75-34-3	1,1-DICHLOROETHANE	ND	1.			
107-06-2	1,1-DICHLOROETHANE	4.	1.			
75-35-4	1,2-DICHLOROETHANE	3.	1.			
156-59-4	1,1-DICHLOROETHYLENE	210.	1.			
156-60-5	CIS-1,2-DICHLOROETHYLENE	12.	1.			
78-87-5	TRANS-1,2-DICHLOROETHYLENE	7.	1.			
10061-01-5	1,2-DICHLOROPROPANE	ND	1.			
10061-01-5	CIS-1,3-DICHLOROPROPENE	ND	1.			
10001-02-6	TRANS-1,3-DICHLOROPROPENE	ND	1.			
106-93-4	ETHYLBENZENE	ND	1.			
76-13-1	ETHYLENE DIBROMIDE	ND	1.			
	FREON-TF	ND	1.			
119-78-6	2-HEXANONE	ND	5.			
75-09-2	METHYLENE CHLORIDE	ND	5.			
108-10-1	4-METHYL-2-PENTANONE (MIBK)	ND	5.			
100-42-5	STYRENE	ND	1.			
79-34-5	1,1,2,2-TETRACHLOROETHANE	ND	1.			
127-18-4	TETRACHLOROETHYLENE	ND	1.			
109-99-9	TETRAHYDROFURAN	ND	5.			
108-88-3	TOLUENE	ND	1.			
71-55-6	1,1,1-TRICHLOROETHANE	130.	1.			
79-00-5	1,1,2-TRICHLOROETHANE	4.	1.			
79-01-6	TRICHLOROETHYLENE	140.	1.			
75-69-4	TRICHLOROFLUOROMETHANE	ND	1.			
108-05-4	VINYL ACETATE	ND ND	5.			
75-01-4	VINYL CHLORIDE	ND ND	5. 5.			
95-47-6	TOTAL XYLENES	ND ND				
	· · · · · · · · · · · · · · · · · · ·	ND	1.			

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: WCC-6S-1A

WCAS JOB #: 13882

UNITS: UG/L (PPB)

APPROXIMATE

COMPOUND NAME

FRACTION CONCENTRATION

1 NONE FOUND

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: WCC-9S-1A

WCAS JOB #: 13882

DATE RECEIVED: 10/09/89 RUN NUMBER: 13882V7
DATE EXTRACTED: 10/17/89 SAMPLE AMOUNT: 5ML
DATE ANALYZED: 10/17/89 MATRIX: WATER

VOLATILE ORGANICS (EPA 624/8240) UNITS: UG/L (PPB)

CAS # ========	COMPOUND	CONCENTRATION			
67-64-1	ACETONE	======================================	======== 5.		
71-43-2	BENZENE	ND	1.		
75-27-4	BROMODICHLOROMETHANE	ND	1.		
75-25-2	BROMOFORM	ND	1.		
74-83-9	BROMOMETHANE	ND	5.		
78-93-3	2-BUTANONE (MEK)	ND	5.		
75-15-0	CARBON DISULFIDE	ND	1.		
56-23-5	CARBON TETRACHLORIDE	ND	1.		
108-90-7	CHLOROBENZENE	ND			
75-00-3	CHLOROETHANE	ND	1. 5.		
110-75-8	2-CHLOROETHYLVINYL ETHER	ND	10.		
67-66-3	CHLOROFORM	ND	10.		
74-87-3	CHLOROMETHANE	ND	5.		
108-41-8	CHLOROTOLUENE	ND	1.		
124-48-1	DIBROMOCHLOROMETHANE	ND ND	1.		
95-50-1	1,2-DICHLOROBENZENE	ND			
541-73-1	1,3-DICHLOROBENZENE	ND	1.		
106-46-7	1,4-DICHLOROBENZENE		1.		
75-34-3	1,1-DICHLOROETHANE	ND	1.		
107-06-2	1,2-DICHLOROETHANE	ND	1.		
75-35-4	1,1-DICHLOROETHYLENE	ND	1.		
156-59-4	CIS-1,2-DICHLOROETHYLENE	ND	1.		
156-60-5	TRANS-1,2-DICHLOROETHYLENE	7.	1.		
78-87-5	1,2-DICHLOROPROPANE	ND	1.		
10061-01-5	CIS-1,3-DICHLOROPROPENE	ND	1.		
10061-02-6	TRANS-1,3-DICHLOROPROPENE	ND	1.		
100-41-4	ETHYLBENZENE	ND	1.		
106-93-4	ETHYLENE DIBROMIDE	ND	1.		
76-13-1	FREON-TF	ND	1.		
119-78-6	2-HEXANONE	2.	1.		
75-09-2		ND	5.		
108-10-1	METHYLENE CHLORIDE	ND	5.		
100-42-5	4-METHYL-2-PENTANONE (MIBK) STYRENE	ND	5.		
79-34-5		ND	1.		
127-18-4	1,1,2,2-TETRACHLOROETHANE	ND	1.		
109-99-9	TETRACHLOROETHYLENE	ND	1.		
	TETRAHYDROFURAN	ND	5.		
108-88-3 71-55-6	TOLUENE	ND	1.		
	1,1,1-TRICHLOROETHANE	ND	1.		
79-00-5	1,1,2-TRICHLOROETHANE	ND	1.		
79-01-6	TRICHLOROETHYLENE	15.	1.		
75-69-4	TRICHLOROFLUOROMETHANE	ND	1.		
108-05-4	VINYL ACETATE	ND	5.		
75-01-4	VINYL CHLORIDE	ND	5.		
95-47-6	TOTAL XYLENES	ND	1.		

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: WCC-9S-1A

WCAS JOB #: 13882

UNITS: UG/L (PPB)

APPROXIMATE

COMPOUND NAME

FRACTION CONCENTRATION

1 NONE FOUND

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: WCC-12S-1A

WCAS JOB #: 13882

DATE RECEIVED: 10/09/89 RUN NUMBER: 13882V8
DATE EXTRACTED: 10/17/89 SAMPLE AMOUNT: 5ML
DATE ANALYZED: 10/17/89 MATRIX: WATER

VOLATILE ORGANICS (EPA 624/8240) UNITS: UG/L (PPB)

	(2111 02 1) 02 40)	ONITS: UG/L	(PPB)
CAS #	COMPOUND	CONCENTRATION	DET LIMIT
67-64-1	ACETONE	**************************************	5.
71-43-2	BENZENE	ND	1.
75-27-4	BROMODICHLOROMETHANE	ND	
75-25-2	BROMOFORM	ND	1. 1.
74-83-9	BROMOMETHANE	ND	5.
78-93-3	2-BUTANONE (MEK)	ND	5. 5.
75-15-0	CARBON DISULFIDE	ND	
56-23-5	CARBON TETRACHLORIDE	ND	1.
108-90-7	CHLOROBENZENE	ND	1. 1.
75-00-3	CHLOROETHANE	ND	
110-75-8	2-CHLOROETHYLVINYL ETHER	ND	5.
67-66-3	CHLOROFORM	ND	10.
74-87-3	CHLOROMETHANE	ND	1.
108-41-8	CHLOROTOLUENE	ND	5.
124-48-1	DIBROMOCHLOROMETHANE		1.
95-50-1	1,2-DICHLOROBENZENE	ND ND	1.
541-73-1	1,3-DICHLOROBENZENE	ND	1.
106-46-7	1,4-DICHLOROBENZENE	ND	1.
75-34-3	1,1-DICHLOROETHANE		1.
107-06-2	1,2-DICHLOROETHANE	ND	1.
75-35-4	1,1-DICHLOROETHYLENE	· ND	1.
156-59-4	CIS-1,2-DICHLOROETHYLENE	ND	1.
156-60-5	TRANS-1,2-DICHLOROETHYLENE	ND	1.
78-87-5	1,2-DICHLOROPROPANE	ND	1.
10061-01-5	CIS-1,3-DICHLOROPROPENE	ND	1.
10061-02-6	TRANS-1,3-DICHLOROPROPENE	ND	1.
100-41-4	ETHYLBENZENE	ND	1.
106-93-4		ND	1.
76-13-1	ETHYLENE DIBROMIDE	ND	1.
	FREON-TF	4.	1.
119-78-6	2-HEXANONE	ND	5.
75-09-2	METHYLENE CHLORIDE	ND	5.
108-10-1	4-METHYL-2-PENTANONE (MIBK)	ND	5.
100-42-5	STYRENE	ND	1.
79-34-5	1,1,2,2-TETRACHLOROETHANE	ND	1.
127-18-4	TETRACHLOROETHYLENE	ND	1.
109-99-9	TETRAHYDROFURAN	ND	5.
108-88-3	TOLUENE	ND	1.
71-55-6	1,1,1-TRICHLOROETHANE	ND	1.
79-00-5	1,1,2-TRICHLOROETHANE	ND	1.
79-01-6	TRICHLOROETHYLENE	ND	1.
75-69-4	TRICHLOROFLUOROMETHANE	ND	1.
108-05-4	VINYL ACETATE	ND	5.
75-01-4	VINYL CHLORIDE	ND	5.
95-47-6	TOTAL XYLENES	ND	1.

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: WCC-12S-1A WCAS JOB #: 13882

UNITS: UG/L (PPB)

APPROXIMATE

COMPOUND NAME

FRACTION CONCENTRATION

1 NONE FOUND

Data Reporting Qualifiers

- Value If the result is a value greater than or equal to the Detection Limit (DL), the value is reported.
- ND Indicates that the compound was analyzed for but not detected. The minimum DL for the sample with the ND is reported based on necessary concentration or dilution actions.
- TR Indicates an estimated value. This flag is used when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified DL but greater than zero.

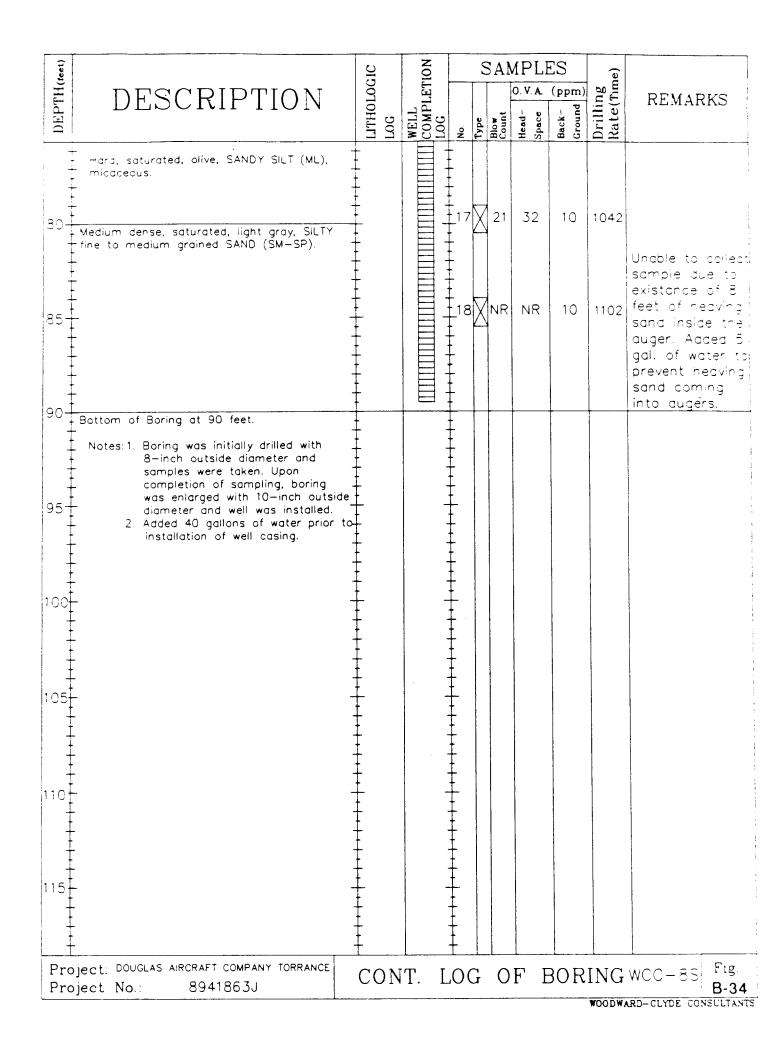
Woodward-Clyde Consultants SHIPMENT NO .:_____ PAGE___OF___ CHAIN OF CUSTODY RECORD DATE 10 16189 PROJECT NAME: Dunies dicate PROJECT NO .: ______ 8741863) Type of Sample Type of Preservation Sample Number Location Type of Container Analysis Required * Material Method Temp Chemical WIE 4 ME VOLA 12-13-H MCC-17 WETER BALED 115 ncc-15-13 hcc-75.12 ucc-75-15 wcc-63-12 wcc-65 0,00 - 03-1B wcc-05-12 wicc-65-15 wcc-125-1A wcc-129 WCC-125-1B WCC-125-12 WCC-125-15 Total Number of Samples Shipped: /2 | Sampler's Signature: Received By Relinquished By: eceived By: 17. THE Signature ______ Date Signature 1 1 1.7 Printed Name Al STHILE 1-11th Will Peter Glasman Printed Name__ Time Reason I - dclipy to was Company willetti) - (1/16 Relinquished By: Date Received By: 1 Signature___ Signature _______ Printed Name__/ Printed Name Time Company___ Reason_____ Relinquished By Received By: Bale & Date Signature_____ 10/9/32 Printed Name Bob Oson Printed Name_ Time Company WCA Company_____ 13882 12:38 Reason ____ Received By: Date Relinquished By: Signature_ Signature_ Printed Name_ Printed Name_ Time Company_ Company__ Special Shipment / Handling / Storage Requirements:

CONTACT: Peter Glassman ur Alitaire (albider 17:4) 835-6886

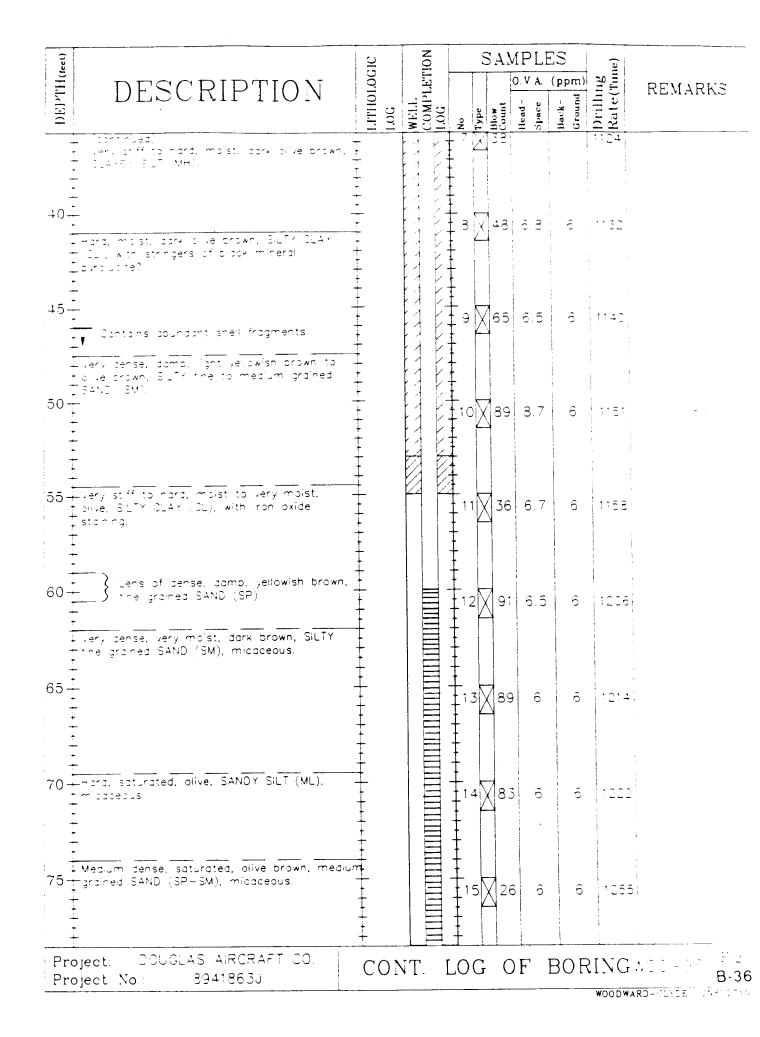
* Note — This does not constitute authorization to proceed with analysis

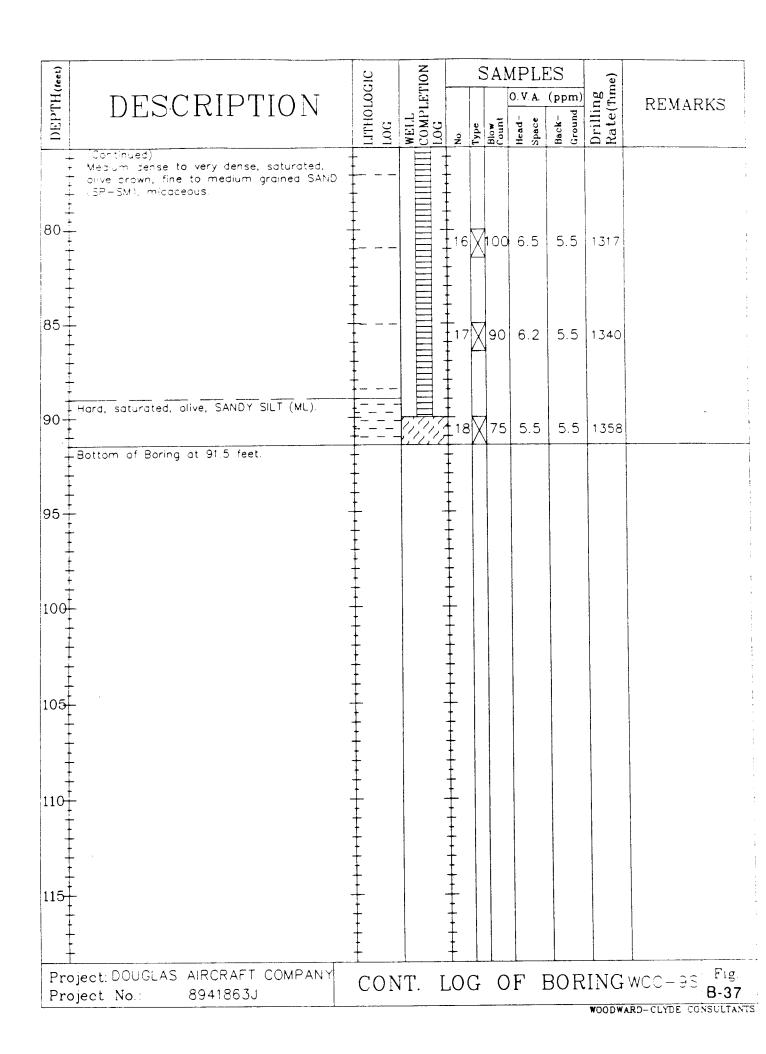
LA: OR -0183-421

DEPTH(feet)		210		ETION		S		ИРI		5	ne)	
Ξ	DESCRIPTION)OTC		PLET				O. V. A		pm)	ing (Tir	REMARKS
DEF	_	LITHOLOGIC LOG	WELL	COMPLE LOG	No	Type	Blow Count	Head -	Back-	Ground	Drilling Rate(Time)	
-+ +	_ Dense, moist, olive brown, SILTY fine _ grained SAND (SM).	-	//		-							
1	- -	-	//	1/2								
 - -	_	_	11		9	\bigvee	24	43		11	0904	
J -	Stiff to very stiff, moist, olive brown, SANDY SILT (ML).			7.77								
	Dense, moist, olive brown, SILTY fine grained - SAND (SM), with abundant calcareous nodules	- -	///									
1	SAND (SM), With abundant calcareous hoodies	-	//		1.0		31	46		10	0917	
5-	Hard, moist, olive, SILTY CLAY (CL), with iron-	-			<u> </u>)	+0		, 0	0317	
	oxide staining and calcareous nodules.	-			+							
+	Medium dense, moist to very moist, olive - gray and yellowish brown, mottled, CLAYEY	 	1/1/		+							
) -	grained SAND (SC)	_			11	' X	13	48	3	10	0925	-
+	- Dense, moist, olive brown, SILTY fine grained -				1							
+	SAND (SM), with abundant shell fragments which are cemented together forming coquina				1							
† 5 –	- -				<u>[</u> 12	$2\sqrt{2}$	43	72	2	10	0938	
+	<u>-</u> -	_			+							
†	- - -	<u> </u>			‡							
<u> </u>	- -Very stiff to hard, moist, olive, SANDY SILT -	_		H .	<u>†</u> 15	3 X	26	70		10	0950	
+	(ML), micaceous, with iron oxide staining.	‡			‡		 					
1	- Very dense, moist, light olive brown, SILTY	‡			‡							
1	fine grained SAND (SM), micaceous.	‡		目	‡ †1,	$\frac{1}{2}$	87	10		10	1003	
5-	- -	 		目.	‡'`	Υ	4	, ,		.)		
	_	‡		目	†							
1	- -	‡			† +		7					
) -	Becomes very moist to saturated.	+		目	1:	5	71	10	0	10	1015	
	<u> </u>	‡			‡							
-	-	‡			‡							
5 –		 		目	‡1	6	35	3 10	0	10	1028	Becomes wet at
	Hard, saturated, olive, SANDY SILT (ML), micaceous.	‡			‡	-						75 feet.
	- - -	‡			+++++++++++++++++++++++++++++++++++++++							
ro'ro	Dject: DOUGLAS AIRCRAFT COMPANY TORRANCE	CON	l L	<u> </u>	$\overline{\cap}$	_ <u>_</u> _		F	R()R	ING	WCC-35 Fig
	pject No.: 8941863J		v 1	. 1		ਪ 		, T.	<u>۔۔۔</u>			RD-CLYDE CONSULTA

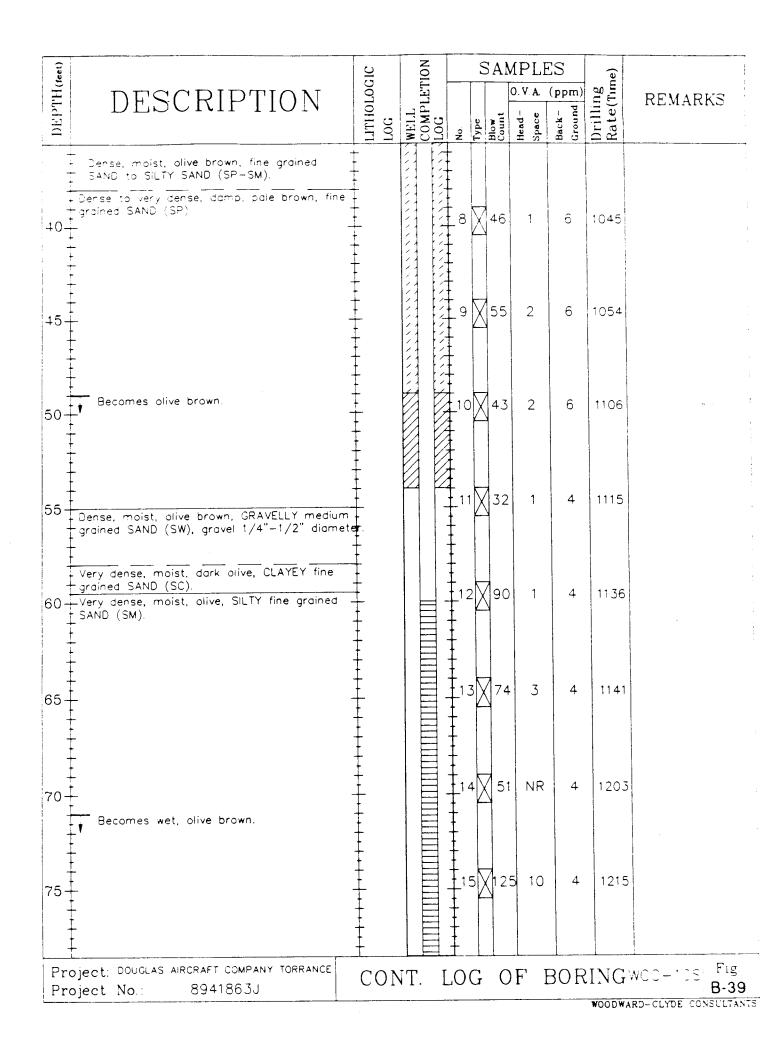


BORING See Location Map			ELEV	ATION DATUS	4	47.01	Feet ab	ove MSL
DRILLING Gregg Orilling and Testing, Inc. DRILLER	C. S.	enson	DATI	TED	9-20	-39	DATE FINISH	
TYPE OF DAME OF 10 SCREEN	.S.A.		DEP	PLETIO TH (ft) IETER	3	1 5 11	ROCK DEPTH DIAME	(ft) — TER OF :
WELL CASING PVC Sch. 40 SCREEN PERFORATION D TYPE SIZE OF Monterey #0/30	TYPE THOSEAL	ICKNESS	BOR	NG (in)		WELL	([N])
No OF DISTUNDIST	CORE		LOG	GED B	(CHECK	ED BY
WATER FIRST _ COMPL _ DEPTH (ft)	24 HRS.				⊃eye 			Pazmajos
DESCRIPTION)ID	WELL COMPLETION LOG		SAN	1PLE		ne)	
E DESCRIPTION	THOTOGIC	LE PLE				(ppm)	= =	REMARKS
보고 	1.03	WEL. COM LOG	No	Type Blo₩ Count	Head Space	Back Groun	Drill Rate	
4- non Asphalt concrete over 6-inch	<u> </u>						.036	
Very stiff to hard, moist, dark yellowish prowe SETY CLAY (CL), with fine argined sand.	! !, +		<u> </u>					
micacebus.	- †		+		1			
;	+		-		1			
· · ·	<u>†</u> +		1	X 45	ŝ	5	1043	
	 		‡					. .
+	<u> </u>		†					
10 +	<u> </u>		2	31	_	6	:051	
<u> </u>	<u>†</u>		-					
St.ff. mo.st. dark yellowish brown, CLAYEY	<u>†</u>		†			ļ		
+SET (MH), micaceous.	+		+					
15 +	_		3	15	7	6	1058	
+	‡		<u> </u>					
Becomes very stiff to hard.	+		†					
20 +			Ī					
+	‡		‡ 4	34	7	6	1102	
	<u></u>		+					
+ Very stiff to hard, moist, dark brown to † plive brown, SILTY CLAY (CL).	<u> </u>		Ī					
25 -	<u> </u>		‡	H.,			1110	
+	+		‡ 5 †	43	6.6	6	1110	
	+		Ī					
Very dense, moist, alive brown, SILTY fine tyrained SAND (SM), with some clay veinlets.	†		‡					
30 —	+		+ 6	M80	6.9	6	1117	
	<u> </u>		Ī	\mathbb{H}^{-1}				
<u> </u>	‡		‡					
Very stiff to hard, moist, dark olive brown, 35 + CLAYEY SILT (MH).	+		+ -,		6	6	1175	
Project: DOUGLAS AIRCRAFT CO.	Γ	11.12	Γ_	<u> </u>	6	<u> </u>	11125	no pagi Fig
Project No.: 8941863J		LOC	, (ΟF	BOF	RINC	i WC	10 - 95 B-35
							WOODWA	RD-CLYDE CONSULTANTS





BORIN					See	- Loc	cation	ı Mar						E	LEV.	ATI DA	ON TUM			51	.12 fe	et	MSL			
DRILLI	ING	A	& F	۶ D	riling)	g, Ind	C.		DRILLE	R N	и . R		ero	D S	ATE TAR	TEL	D 6		-89		DATE FINISH	ED_	6_	7-5	39	
DRILLI EQUIP	ING PMENT	[СМЕ	7!	5 wit	th 8)., H.S					D	EPT:	Ή (3	8.09		ROCK DEPTH	(ft)				
TYPE	OF CASII	NG		<u> </u>	Sch. 6	40	SCRE	EN FORATIO	ON)1 — ir			B			ER 01 (in.)		10		DIAME WELL	TER (OF	1		
TYPE/ SAND	PACE	ŌF 〈				star	No.			T)	YPE/T F SEA	HIC L(S)	KNES:					ie De	ellets	5 f	t./Voic		-	13	*:	
No OF SAMPL	LES			DIST	U	<u>)</u>		DIST.	18	. 1	ORE		0	L			BY . Glo	aesr	man		CHECK		BY dzmi:	٠. ١.		
WATER DEPTH	{ 1 (ft)		F	FIRS	T _		COL	MPL		124	4 HRS			+				Reye			٧٠.		. : کند	ال دار الما 		
eet)											21:		COMPLETION		,	S	AM [°]	PLE	ES		(e)					
DEPTH(feet)			DΙ	7	701	DH	PTI	(\cap)	J		LITHOLOGIC LOG		ET		\exists	\Box	(). V A	. (ppr	n)	Drilling Rate(Time	R	EM.	1 R F	(2)	
3PT			DE	<u> </u>) (I	[/11	_ 11	$\Gamma \bigcap \Gamma$	N		은 달 당		MPI	1		aı	ı t	d- ce	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Cround	Drilling Kate(Tm	1.	٠,٠,٠	7141	\~	
DE											100	¥.	201	3	ý .	Type	Blow	Head- Space	Back	2	Dr. Ra			·		
1						t cond	crete,	over 9	9-inch	I		K	1	1				1	6	-	J954					
Ī	Soft	<u>se</u> , v	<u>mater</u> ery m	<u>riui.</u> 10ist	t to s	satura	ited, b	lack,	SANDY]		1] :	1												
<u> </u>	OLAS	V 11	$C \cap V$				oist, do			1		1	1:	4												
‡	•	orow			,					‡		1	1	#	K											
5 🕂	_									+		1	1 :	4	. 1 [X	24	1	7		1000					
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+	Madi		—		moist	- Olive	2 Drow	<u> </u>	TY fine	\pm		1	} [:	4												
Ŧ	grair:	ned	SAN	D (5	SM), \	with t	trace c	of clay	y.	+		E	1	7							į					
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							fine	 graine	d SAND	; †		1	1	4	-											
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35 +										<u></u>			11	1		\triangle						<u> </u>				
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																					WOODWA	ARD-	CLYDE	: CO.N	SULT	ĀŅ



Douglas aircraft (C6) Torrance Facility

